VOLUME XXVIII
NUMBER THREE

# The NATIONAL GEOGRAPHIC MAGAZINE

SEPTEMBER, 1915

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With 13 Illustrations and 2 Maps — JOHN OLIVER LA GORCE

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London
With 29 Illustrations — FLORENCE CRAIG ALBRECHT

PUBLISHED BY THE
NATIONAL GEOGRAPHIC SOCIETY
HUBBARD MEMORIAL HALL
WASHINGTON, D.C.

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XUM

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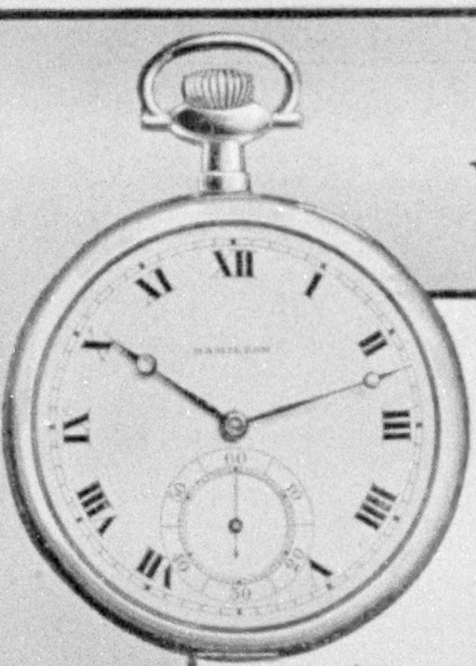

# Long Term Watch Insurance

It is policy to buy a good watch. The owner of a Hamilton is practically insured against needing a new watch, or against having a watch that is always in need of repairs.

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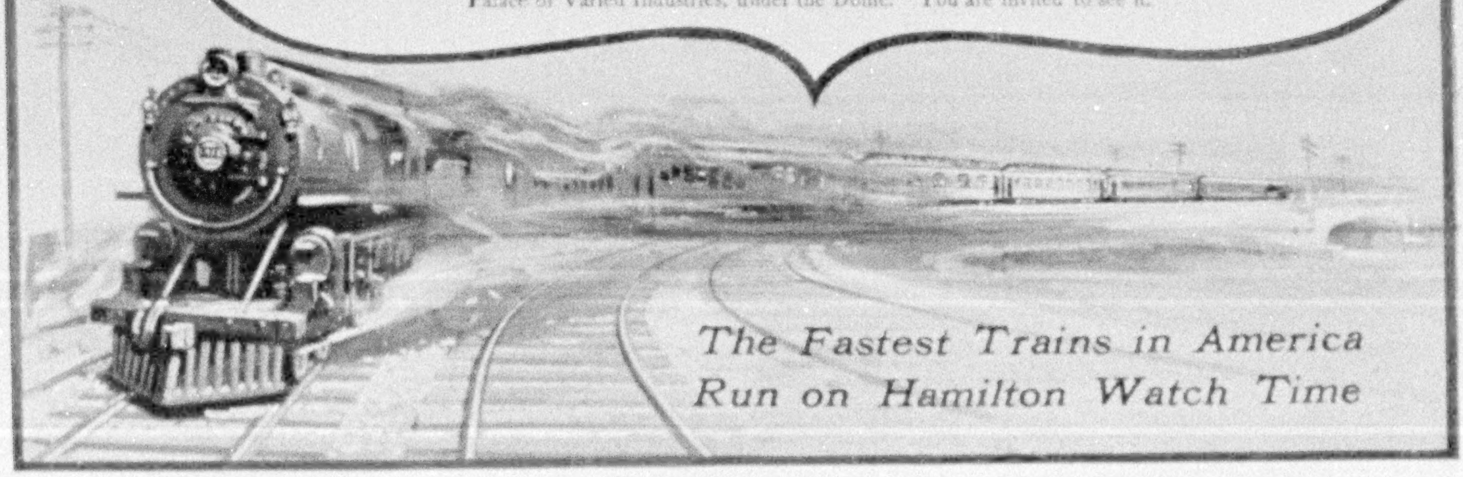


*The Fastest Trains in America Run on Hamilton Watch Time*

XUM

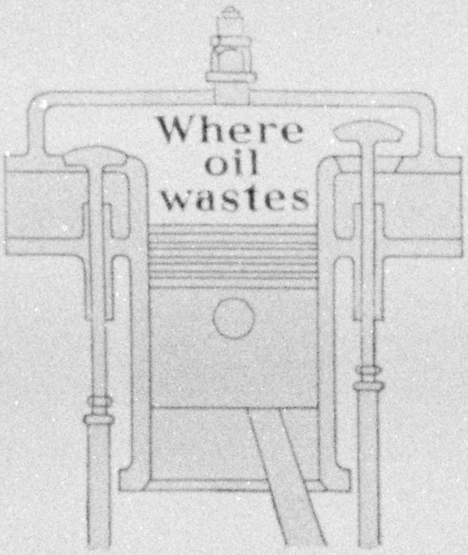
# What does your oil do?

## *Does it lubricate correctly—save power—protect your motor? Or does it just burn up?*

If you have checked up the mileage which different oils yield on your car, you have probably found that some oils are consumed far more rapidly than others.

Why?

If an oil too heavy in *body* is used, it will fail to reach all friction points.



Often an oil is too light in *body* for the motor's mechanical conditions. Excess oil then gets by the piston rings. Reaching the combustion chamber it burns.

When oil consumes rapidly, power-waste also occurs. The fuel charge escapes past the piston rings on the compression stroke. Gasoline consumption mounts up.

Even with oils of correct *body* a minute quantity of the oil works past the piston rings and is burned up.

But with oils of *incorrect body* this consumption becomes rapid.

It results naturally in sheer oil waste. But it results, too, in other more serious consequences. One is excess carbon deposit.

Of course too rich a gas mixture is a frequent cause of carbon trouble. But the experienced motorist knows—or should know—that an excess of lubricating oil in the combustion chambers must result in unnecessary carbon trouble.

To minimize carbon, your lubricating oil must be of the correct *body* for the piston clearance of your motor.

*Correct body is no subject for guess work.*

A very large and rapidly growing class of motorists have found that their safest guide to correct *body* in lubricating oil is found in the lubricating Chart on the right. This Chart has for several years been the standard guide to correct lubrication. It is annually brought up-to-date by a thorough engineering analysis of each year's models of every make of car by our corps of technical experts and represents our professional advice.

To first-time users the "wear" of Gargoyle Mobiloils is often astonishing. This is due in part to their unusual ability to "stand up" under the heat of service—and because they maintain a proper seal between pistons, piston rings and cylinder walls—i.e., have correct *body*.

In short, the oils stay where they belong. They are not burned up by working in excess quantities into the combustion chambers.

GARGOYLE

# Mobiloils

*A grade for each type of motor*

The four grades of Gargoyle Mobiloils for gasoline motor lubrication, purified to remove free carbon, are:

**Gargoyle Mobiloil "A"**
**Gargoyle Mobiloil "B"**
**Gargoyle Mobiloil "E"**
**Gargoyle Mobiloil "Arctic"**

*For Electric Vehicles* use Gargoyle Mobiloil "A" for motor and enclosed chains. For open chains and differential use Gargoyle Mobiloil "C."

In buying Gargoyle Mobiloils from your dealer, it is safest to purchase in original packages. Look for the red Gargoyle on the container. For information, kindly address any inquiry to our nearest office.

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Rochester, N. Y., U. S. A.

**Specialists in the manufacture of high grade lubricants for every class of machinery. Obtainable everywhere in the world.**

| *Domestic Branches:* | Detroit<br>Pittsburgh | Boston<br>Philadelphia | New York<br>Indianapolis | Chicago<br>Minneapolis |
|---|---|---|---|---|

## Correct Automobile Lubrication

*Explanation:* In the Chart below, the letter opposite the car indicates the grade of Gargoyle Mobiloils that should be used. For example, "A" means Gargoyle Mobiloil "A," "Arc" means Gargoyle Mobiloil "Arctic," etc. The recommendations cover all models of both pleasure and commercial vehicles unless otherwise noted.

| MODEL OF | 1911 | | 1912 | | 1913 | | 1914 | | 1915 | |
|---|---|---|---|---|---|---|---|---|---|---|
| CARS | Summer | Winter | Summer | Winter | Summer | Winter | Summer | Winter | Summer | Winter |
| Abbott Detroit | A | Arc. | A | Arc. | A | Arc. | Arc. | Arc. | Arc. | Arc. |
| " " (8 cyl.) | | | | | | | | | A | A |
| Alco | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | | | | |
| Auburn (4 cyl.) | A | A | A | A | A | A | A | A | A | Arc. |
| " (6 cyl.) | | | | | | | Arc. | Arc. | Arc. | Arc. |
| Autocar (2 cyl.) | A | Arc. | A | Arc. | A | Arc. | A | Arc. | A | Arc. |
| " (4 cyl.) | A | Arc. | A | Arc. | | | | | | |
| Avery | A | B | A | A | A | A | A | A | A | A |
| " (Model C) 1 Ton | | | | | | | Arc. | Arc. | Arc. | Arc. |
| Buick | A | Arc. | A | Arc. | A | Arc. | A | Arc. | Arc. | Arc. |
| Cadillac | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | | |
| " (8 cyl.) | | | | | | | | | Arc. | Arc. |
| Cartercar | A | E | A | E | A | E | Arc. | Arc. | Arc. | Arc. |
| " Com'l | A | Arc. | A | Arc. | A | Arc. | | | | |
| Case | A | A | A | Arc. | A | Arc. | A | Arc. | A | Arc. |
| Chalmers | A | Arc. | Arc. | Arc. | Arc. | Arc. | A | A | Arc. | Arc. |
| Chandler | | | | | | | Arc. | Arc. | Arc. | Arc. |
| Chase (air) | B | B | B | B | B | B | B | B | B | B |
| " (water) | | | | | | | Arc. | Arc. | Arc. | Arc. |
| Chesterfield six | | | | | | | | | A | Arc. |
| Chevrolet | | | | | A | A | A | Arc. | Arc. | Arc. |
| Cole | A | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |
| " (8 cyl.) | | | | | | | | | A | A |
| Cunningham | A | A | A | A | A | A | Arc. | Arc. | Arc. | Arc. |
| Delaunay-Belleville | B | A | B | A | B | A | B | A | | |
| Detroiter | | | A | Arc. | A | Arc. | A | A | A | Arc. |
| " (8 cyl.) | | | | | | | | | Arc. | Arc. |
| Dodge | | | | | | | | | E | E |
| E. M. F. | Arc. | Arc. | Arc. | Arc. | | | | | | |
| Empire | A | Arc. | A | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |
| Fiat | B | A | A | A | B | A | B | A | B | A |
| Ford | E | E | E | E | E | E | E | E | E | E |
| Franklin | A | Arc. | A | Arc. | A | Arc. | A | A | A | A |
| " Com'l | B | A | A | Arc. | A | Arc. | | | | |
| Garford Com'l | A | Arc. | Arc. | Arc. | Arc. | Arc. | A | A | | |
| Grant | | | | | | | Arc. | Arc. | Arc. | Arc. |
| Haynes | A | Arc. | A | Arc. | A | Arc. | A | Arc. | A | Arc. |
| Hudson | A | Arc. | A | Arc. | A | Arc. | Arc. | Arc. | Arc. | Arc. |
| Hupmobile | | | | | A | Arc. | A | Arc. | A | Arc. |
| " (Model 20) | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | | | | |
| I. H. C. (air) | | | | | B | A | B | A | B | A |
| " (water) | | | | | A | A | A | A | A | A |
| International | B | B | B | A | | | | | | |
| Interstate | A | Arc. | A | Arc. | A | Arc. | A | Arc. | A | Arc. |
| Jackson | A | Arc. | A | Arc. | A | Arc. | Arc. | Arc. | Arc. | Arc. |
| Jeffery | | | | | | | A | A | A | Arc. |
| " Com'l | | | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | A | Arc. |
| Kelly Springfield | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | A | A | A | A |
| King | A | E | A | E | A | E | A | A | A | Arc. |
| " (8 cyl.) | | | | | | | | | Arc. | Arc. |
| " Com'l | | | | | | | Arc. | Arc. | Arc. | Arc. |
| Kissel Kar | A | Arc. | A | Arc. | A | Arc. | A | Arc. | A | Arc. |
| " " Com'l | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | A | Arc. | A | Arc. |
| " " (Model 48) | | | | | | | A | A | A | A |
| Kline Kar | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | A | Arc. | A | Arc. |
| Knox | B | A | B | A | B | A | B | A | B | A |
| Locomobile | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | E | E | E | E |
| Lozier | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | A | Arc. | | |
| Mack | A | E | E | E | E | E | A | E | A | E |
| " (Model S) | | | | | A | A | A | A | A | A |
| Marmon | A | Arc. | A | Arc. | A | Arc. | A | Arc. | A | Arc. |
| Maxwell | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |
| Mercer | A | Arc. | A | Arc. | A | Arc. | A | Arc. | A | Arc. |
| " (22-70 Series) | | | | | | | | | Arc. | Arc. |
| Metz | B | Arc. | A | Arc. | A | Arc. | A | Arc. | A | Arc. |
| Mitchell | A | Arc. | A | Arc. | A | Arc. | A | Arc. | A | Arc. |
| Moline | A | Arc. | A | Arc. | A | Arc. | | | | |
| " Knight | | | | | | | A | A | A | A |
| Moon (4 cyl.) | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | A | Arc. | Arc. | Arc. |
| " (6 cyl.) | | | | | | | Arc. | Arc. | Arc. | Arc. |
| National | A | A | A | A | A | A | A | A | A | Arc. |
| Oakland | A | Arc. | A | Arc. | A | Arc. | Arc. | Arc. | Arc. | Arc. |
| Oldsmobile | A | Arc. | A | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |
| Overland | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |
| Packard | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | A | Arc. | A | Arc. |
| Paige | A | Arc. | A | E | A | E | A | A | A | Arc. |
| " (6 cyl.) | | | | | | | | | Arc. | Arc. |
| Pathfinder | | | | | A | Arc. | Arc. | Arc. | Arc. | Arc. |
| Peerless | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |
| Pierce Arrow | A | Arc. | A | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |
| " " Com'l | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |
| Pope Hartford | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | | |
| Premier | A | Arc. | A | Arc. | A | Arc. | A | Arc. | A | Arc. |
| Rambler | A | Arc. | Arc. | Arc. | Arc. | Arc. | | | | |
| Regal | A | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |
| Renault | A | Arc. | A | Arc. | A | Arc. | A | Arc. | A | Arc. |
| Reo | A | Arc. | A | Arc. | A | Arc. | A | Arc. | A | Arc. |
| S. G. V. | B | Arc. | B | Arc. | B | Arc. | A | Arc. | A | Arc. |
| Saxon | | | | | | | E | E | E | E |
| Selden | A | E | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |
| Simplex | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |
| Stearns | A | Arc. | A | Arc. | | | | | | |
| " Knight | | | A | A | A | A | B | A | B | A |
| " " (Light 4) | | | | | | | | | A | Arc. |
| Stevens Duryea | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |
| Stoddard-Dayton | A | A | A | A | A | A | | | | |
| " " Knight | | | A | A | A | A | | | | |
| Studebaker | A | Arc. | Arc. | Arc. | A | Arc. | A | Arc. | Arc. | Arc. |
| Stutz | | | Arc. | Arc. | Arc. | Arc. | A | A | A | A |
| Velie (4 cyl.) | A | Arc. | A | Arc. | A | Arc. | A | Arc. | A | Arc. |
| " (6 cyl.) | | | | | | | Arc. | Arc. | Arc. | Arc. |
| White | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |
| Willys Knight | | | | | | | A | A | B | A |
| " Utility | | | | | | | A | Arc. | Arc. | Arc. |
| Winton | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. | Arc. |

# ARROW

*Donchester*

## DRESS SHIRTS

The bosom of a DONCHESTER SHIRT—like good manners—is never out of place. The lower end of the bosom, being free, slides over the trouser band, instead of buckling up and bulging out of the waistcoat opening. $1.50, $2.00 and $3.00

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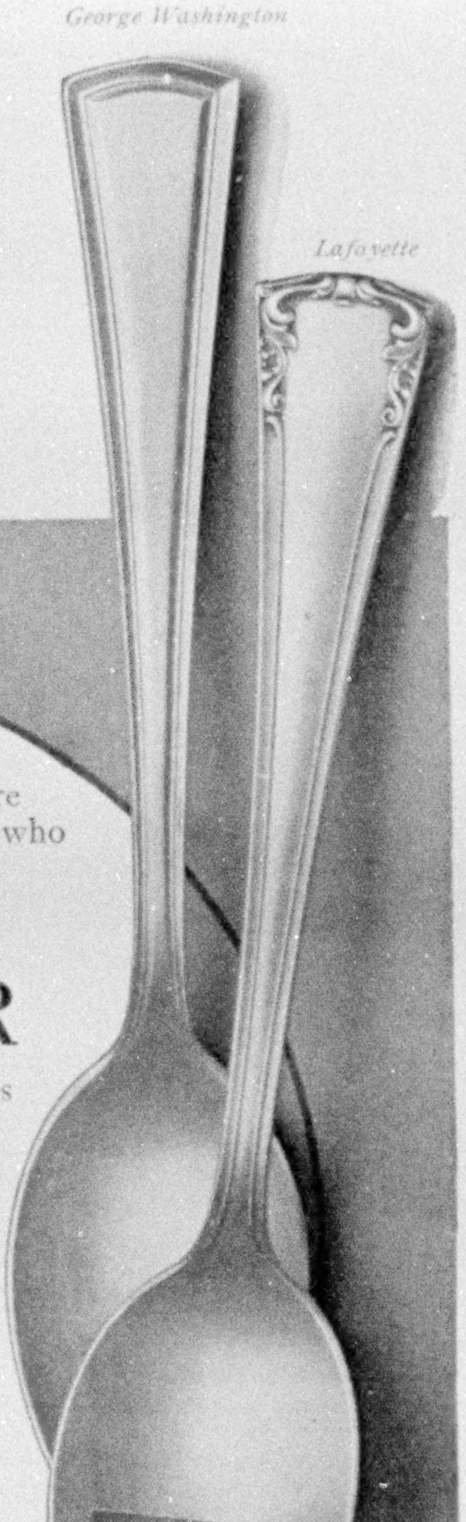
# What Are They Saying?

ALVIN
SILVER



The young ladies in the picture are talking about this silver. What are they saying? The jeweler in your town who displays this picture in his window offers

## a prize chest of

## ALVIN SILVER

for the most clever answer in 50 words or less to this question. Get an answer blank from your jeweler today. Some one in every town will win one of these chests.

***Why not you?***

If you are sure there is no Alvin Jeweler in your town, send your answer direct to us, giving name of your jeweler. Contest closes October 30, 1915.

In addition to this prize given by your jeweler, we offer a

**GRAND PRIZE CHEST**

of Alvin flatware for the most clever answer of all those received in the local contests. The picture above shows this prize—208 pieces of Alvin Silver, the Long-Life Plate, in a genuine mahogany chest, valued at $225.

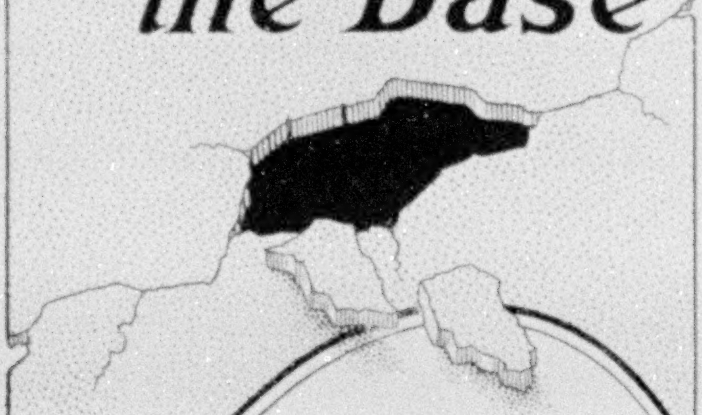
In case two or more are entitled to this prize, each will receive one of these chests

**ALVIN**
Silver
*The Long-Life Plate*
ALVIN PATENT

Alvin Mfg. Co.
Sag Harbor, N. Y.

*This is the prize chest your jeweler offers. You can win it.*

# Blame the Base



*The Lath is Responsible for Most Plaster Failures*

It's not so much what goes into the plaster as goes *under* it that makes your walls permanent.

Metal lath is the modern plaster base. Ask any architect.

**Kno-Burn**

**Expanded Metal Lath**

is the ideal metal lath because it is made with a mesh that the plaster grips permanently; because it expands and contracts with the plaster under the stress of sudden temperature changes and because it is equally adaptable for inside plaster and outside stucco.

*"Practical Homebuilding"* tells all about metal lath as compared to other plaster bases. It gives you comparative cost of stucco, brick and frame construction—floor plans—a fund of *real* building information. Send for it *today.*

***Send ten cents to cover cost of mailing and ask for booklet 849***

**North Western Expanded**
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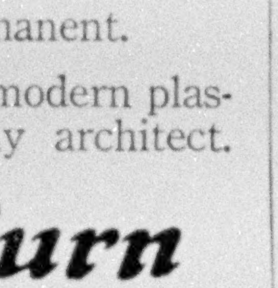

You use Coffee at your house, of course? You wish to obtain the very best flavor and quality-value for your money? You can believe the evidence of YOUR OWN senses? Then you just TRY White House for luck.

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COFFEE
IN 1, 2 AND 3 LB. CANS
ONLY
DWINELL-WRIGHT CO.
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It is of such surpassing deliciousness that it is creating a sensation wherever we have placed it on sale. Thousands of people, all over the United States, regard it as infinitely superior to any other brands, and gladly recommend its use to friends and neighbors.

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A JOY

Shaving doesn't make your razor dull half as fast as rust does. Rust, caused by moisture from lather, forms on the microscopic teeth of the edge. This makes the blade pull and scrape.

You can't wipe the blade so dry that rust won't form between the microscopic teeth. The sharper the edge and thinner the steel, the greater the rust. That's a scientific fact!

To keep a sharp blade *always* keen and clean (ordinary or safety razor) simply do this: Rub a few drops of 3-in-One well into your razor strop. Draw the razor blade between your thumb and first finger, moistened with 3-in-One. Then strop as usual. You'll be surprised at the improvement. Always wipe blade dry and apply a little 3-in-One after shaving.

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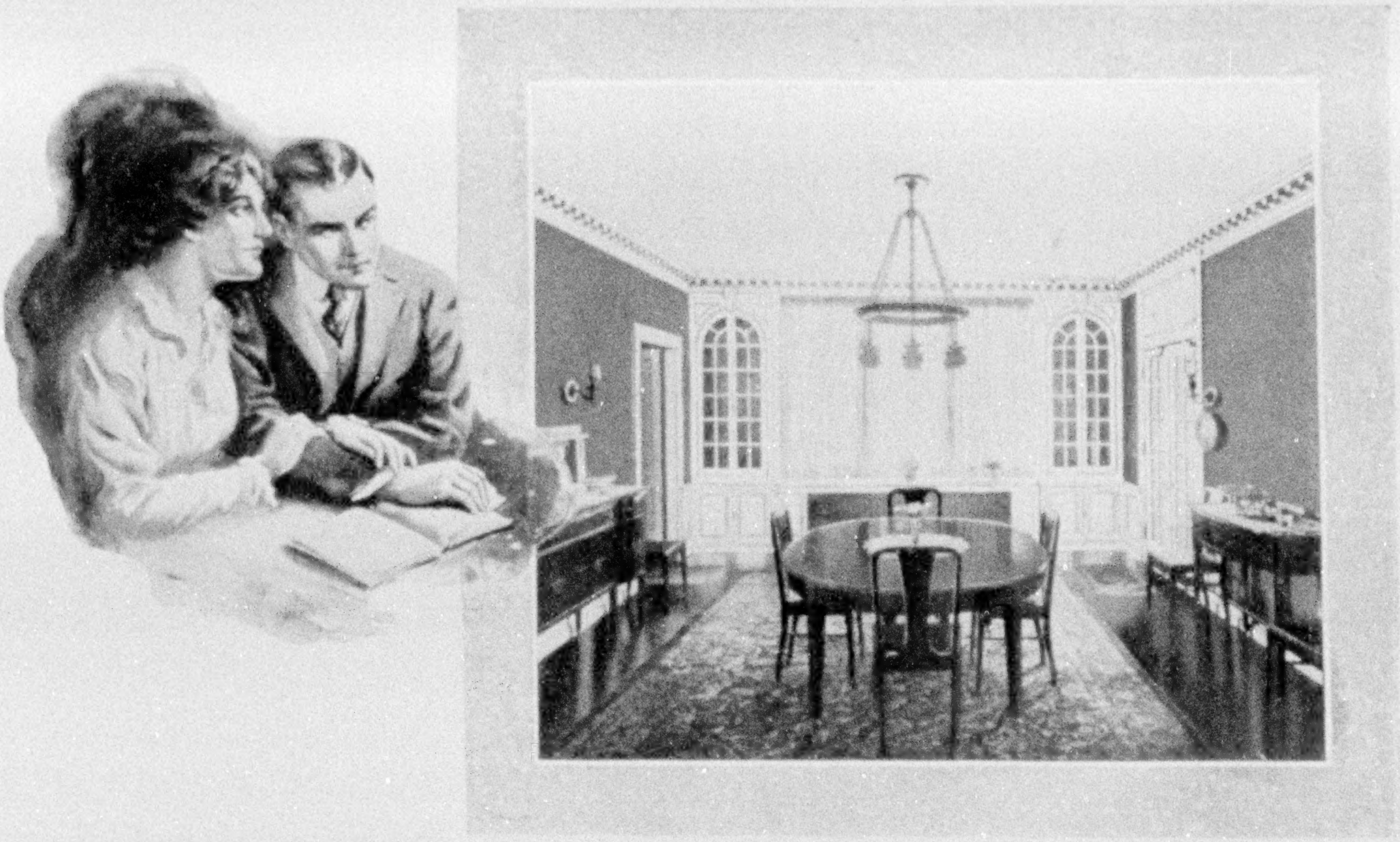
**3-in-One Oil Co.,** 42 UW., Broadway, New York



## *The* "Home Builders"

**NO. 1** **THE DINING ROOM**

WHEN it came to finishing the dining room John remembered the handsome white and mahogany finish in his grandfather's stately home built in 1858. He knew that Berry Brothers' varnishes were used on the woodwork; so he suggested the use of

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Factories: Detroit, Mich., Walkerville, Ont., San Francisco, Cal.
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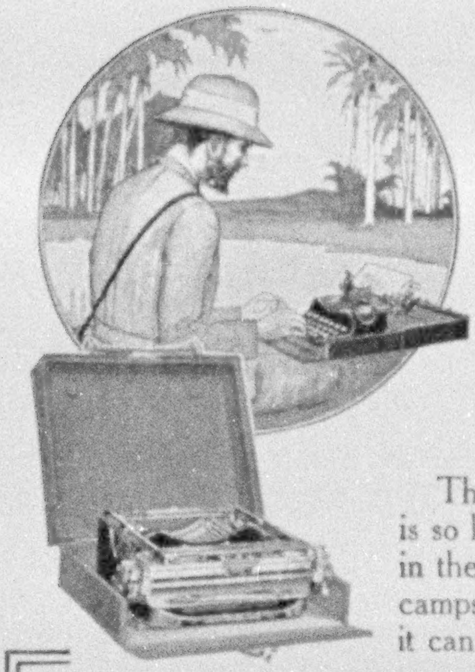

# In the Field or at Home

there is one writing machine that best meets the requirements of both kinds of service. It is the

## CORONA

### Folding Typewriter

*"The Machine for Personal Use"*

The Corona is unique among typewriters. It is so light (weighing only 6 lbs.) that the man in the field can operate it on his knees or on a campstool. It is so compact, when *folded*, that it can be carried as handily as a camera.

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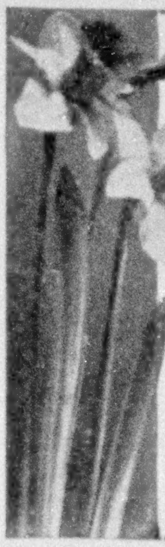

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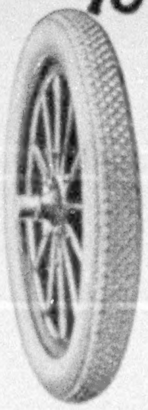

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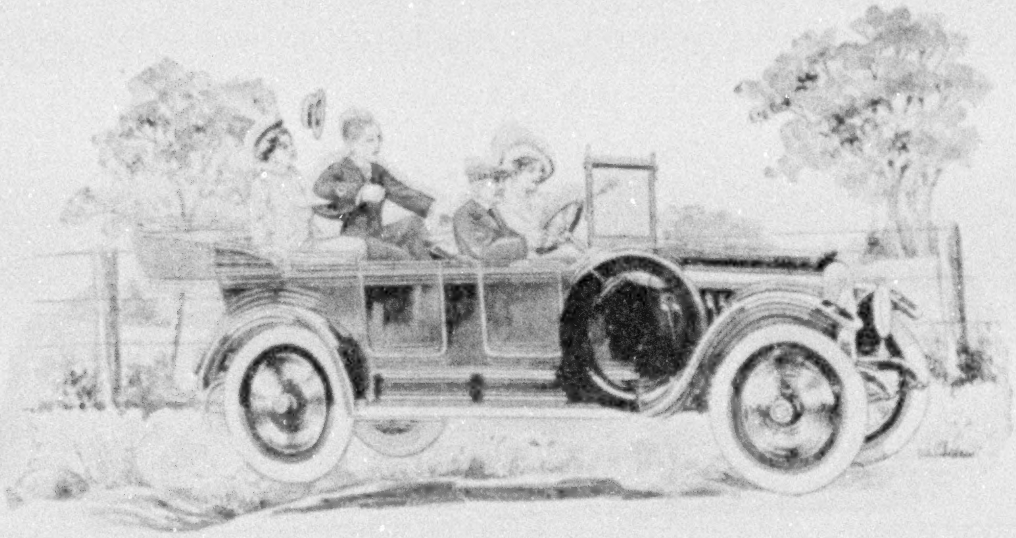

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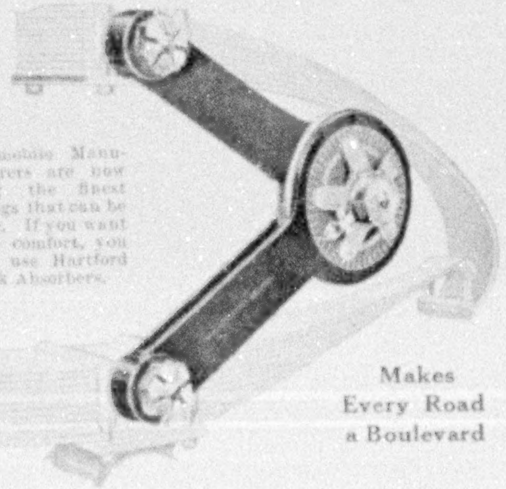

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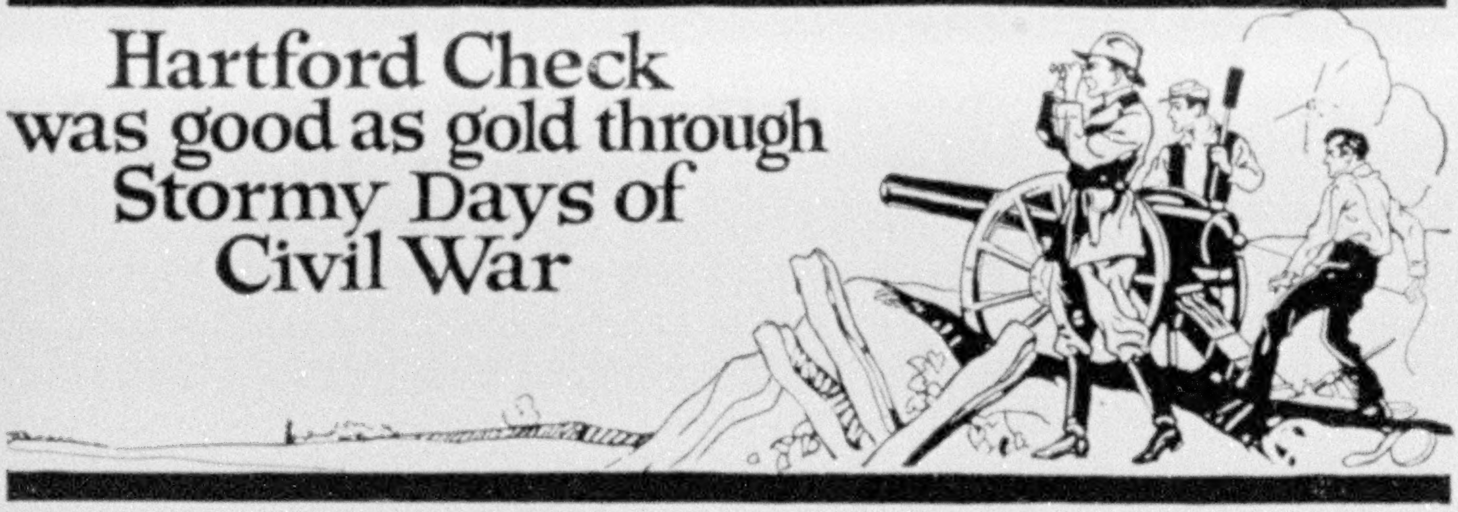

The last mail from the North in 1861, brought to James L. Byington of Albany, Ga., a check of the Hartford Fire Insurance Company for $800 in payment of a loss. Received too late to be sent North for collection this check was universally accepted as legal tender and during the Civil War traveled throughout the Southern States, changing hands many times as readily as gold coin, increasing in value as Confederate money depreciated. When it finally reached its home bank in Hartford in 1864 it was literally covered with endorsements. For over a century, through war, panic and conflagration, the "Hartford's" name on a promise to pay has everywhere been as "good as gold."

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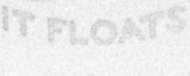
IVORY SOAP. . . . . . $99\frac{44}{100}$% PURE

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VOL. XXVIII, No. 3 WASHINGTON SEPTEMBER, 1915

THE NATIONAL GEOGRAPHIC MAGAZINE

# THE WARFARE ON OUR EASTERN COAST

### BY JOHN OLIVER LA GORCE

WE ARE prone to marvel at the wonderful changes that geologic ages have wrought upon the face of mother earth; it seems almost unreal that there could have come about transformations great enough to convert the polar regions from a wilderness of vegetation into a land of perpetual ice and snow, changes vast enough to bring the tops of mountains to the bottom of the sea and the bottom of the sea to the tops of the mountains. Moreover, to the casual observer in this work-a-day world, it seems a wild dream of fancy to think that the clock of geologic time is still running and registering these same processes hour by hour.

### A WAR OF ETERNITY

Yet it is true; and in some places it runs so fast that we may, as it were, see the minute hand moving upon the dial. One of the most conspicuous places by which to illustrate this remarkable condition is the coast line of the southeastern United States from the Virginia Capes to the Rio Grande. Here, as along every other coast-line on the face of the earth, there is perpetual warfare between the land and the sea, with the wind as a shifting ally, now throwing its weight into the balance on the one side and now on the other. Here the land is taking the offensive, driving the sea back foot by foot, always with the aid of the wind; there the sea assumes the offensive and eats its way landward slowly and laboriously, but none the less successfully. The varying fortunes of this relentless and age-long war, which neither truce nor treaty will ever bring to an end, can be read in the shifting sands of the seashore. At many points along the coast of the Northeastern States are found bold cliffs, and the charging sea attacks them with the shot and shell of loose shingle. Some of them, however, are adamant and impregnable in their frontal fortifications and hold out against the sorest siege, but between them have occurred stretches of softer rock which have been literally pounded to dust by the ocean's heavy artillery, thus permitting flank attacks on the hitherto unconquered defenses.

Along the southeastern coast, however, the rock-bound cliff is the exception and the long stretches of glittering sand the rule. Here the sandy beach reaches out farther and farther into the sea, and the water is thus enabled to penetrate farther and farther into the land, because the attack of the sea is usually a frontal movement and that of the land frequently a wedge attack; thus we can account for the long straight shore on the one hand and the split on the other.

### CAPE HENRY'S SMILING SANDS

Cape Henry, Virginia, where the great Chesapeake Bay empties into the Atlantic, is one of the most interesting points along the South Atlantic coast. It af-

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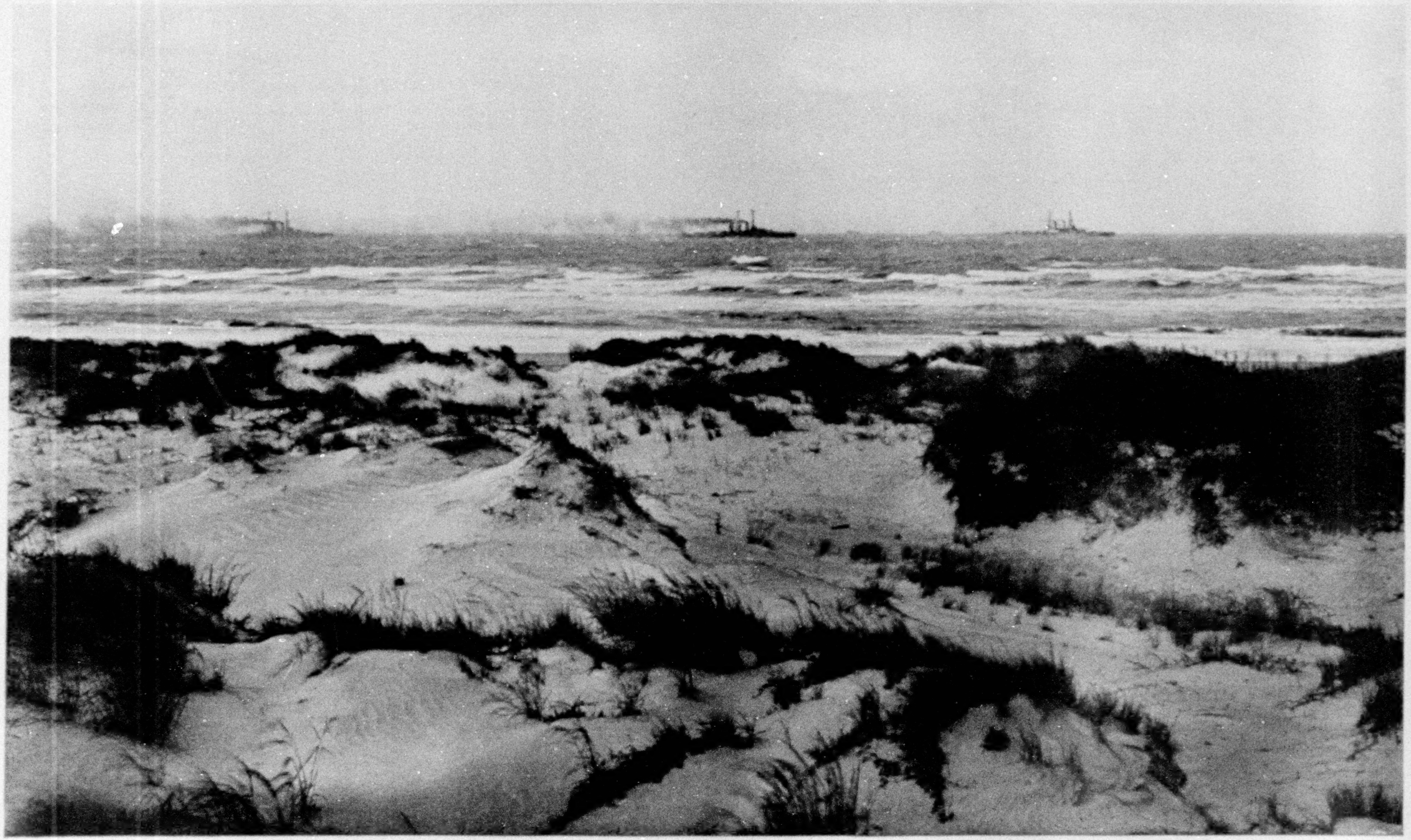

Photo by H. C. Mann

A BATTLE-FIELD NEAR THE VIRGINIA CAPES

The sea and the sand never seem to weary of the conflict along the coast-line of the South Atlantic States, and, as a result, the formation changes considerably from year to year. Battleships of the North Atlantic Squadron steaming out to target practice from Hampton Roads, where the world's first ironclads matched strength.

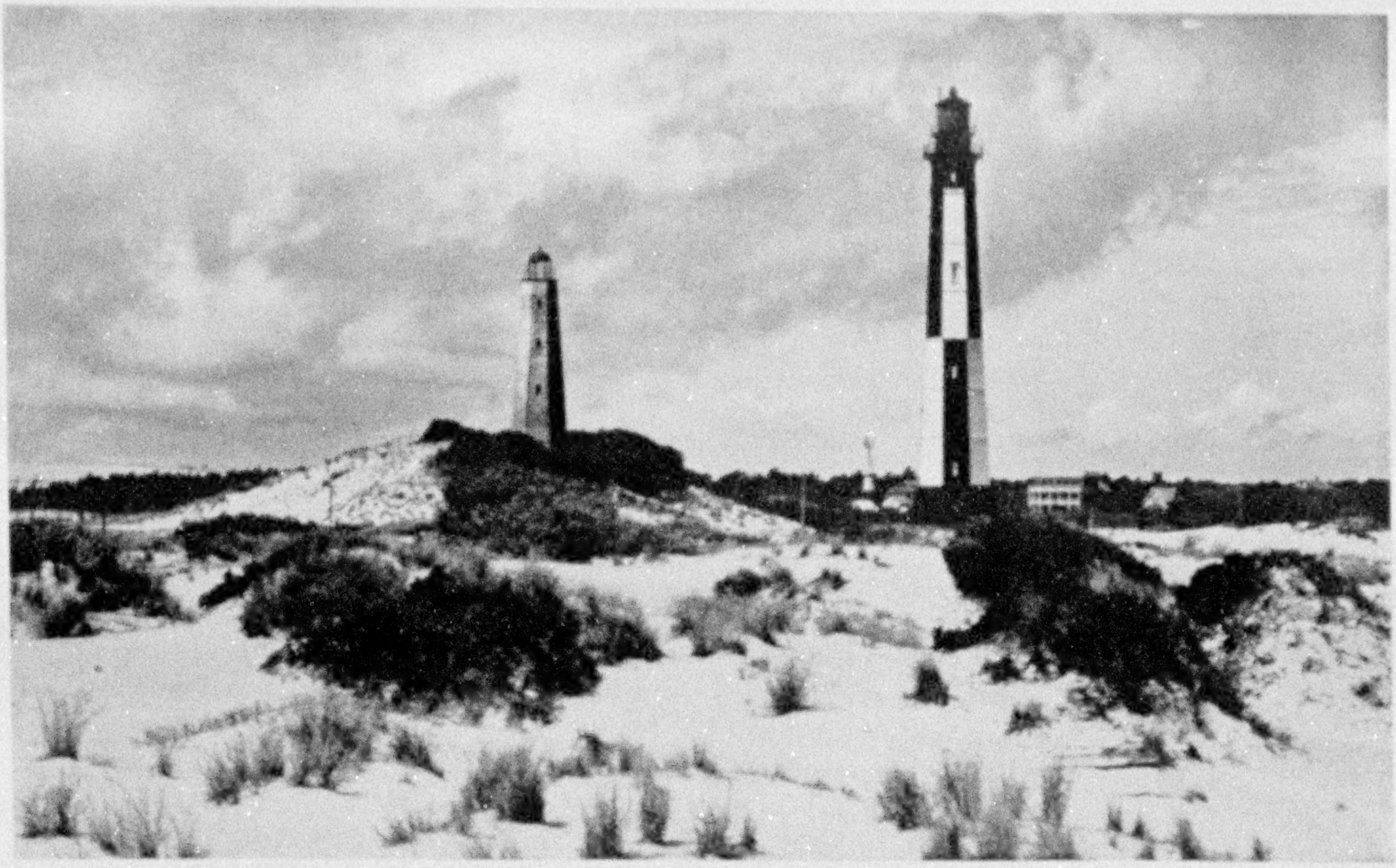

Photo by H. C. Mann

THE OLD AND NEW LIGHTHOUSES: CAPE HENRY, VIRGINIA

The old lighthouse at Cape Henry has the distinction of being the first light built by the young government of the United States. It served as a beacon for vessels entering from the ocean through Cape Charles and Cape Henry for nearly a hundred years. Note how the beach has traveled seaward in a century, leaving the old lighthouse high and dry on its solid hill, the bottom of which was, at one time, the records show, swept by the tides.

fords an excellent opportunity to study the battle royal between the sea, the winds, and the sands, and it is remarkable also for the weird beauty of its storm-buffeted beach, extending in broken masses of sand as far as the eye can reach, picked out here and there along the land edge by gnarled and stunted trees, beach grass, and hardy shrubs, which make a brave fight against the ever-encroaching enemy.

Cape Henry dates back to the early years of the sixteenth century, when a brave little fleet of three vessels, the largest being only 100 tons and the smallest less than 15, set sail from London, under the command of Capt. Christopher Newport, for the West Indies. Encountering great storms on their lonely journey of months upon the angry Atlantic, the voyagers finally won their way to a landfall and entered the Chesapeake, to find a well-deserved resting place at Jamestown, the early English settlement. They decided, however, to stop midway, and high on the beach where they landed a wooden cross was erected in thanksgiving for their safe arrival, and the little band took possession of the territory in the name of their country, calling the spot "Cape Henry" in honor of the Prince of Wales and the son of James the First, their king. Later they crossed the bay to another and more sheltered harbor, naming the place for that reason "Point Comfort," which is today known to thousands of travelers who throughout the year delight in its remarkable climate and healthful surroundings, its splendid hotel accommodations and safe harbor, as Fortress Monroe and its guns guard the entrance from the sea.

At Cape Henry in 1791 was erected the first lighthouse built by the young United States government, a great tower of rough-hewn stone, which was indeed a welcome sight to storm-tossed mariners coming in from the broad Atlantic through the 14-mile entrance between the Capes, Henry and Charles. After many years of faithful service the an-

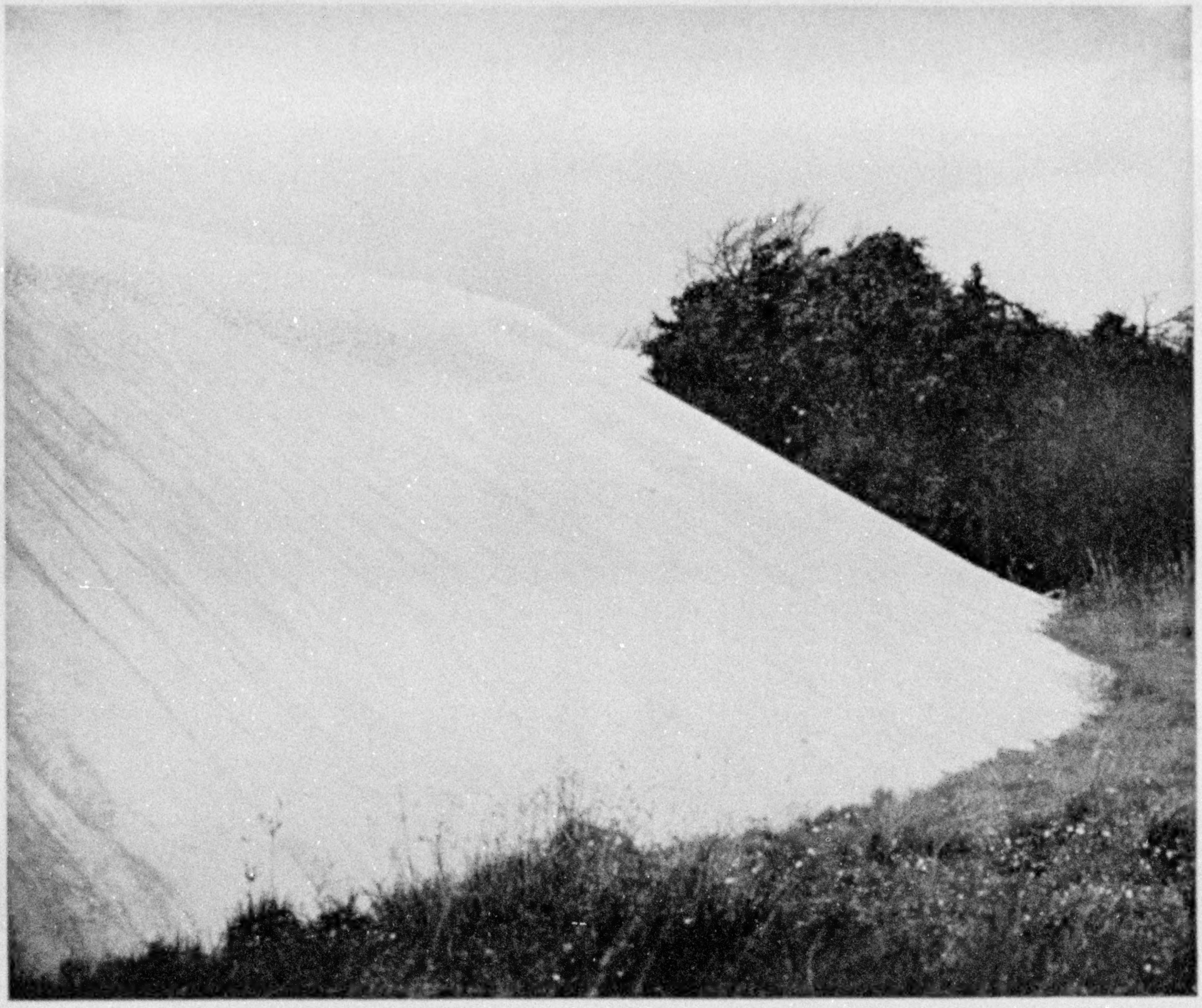

Photo by H. D. Wood

SAND BEING BLOWN IN FROM THE BEACH: SHACKELFORD BANK, NORTH CAROLINA

The sand comes inland at this point on the island at the rate of one-quarter mile per year

cient beacon gave way to a more pretentious structure, which was erected in 1881, but the old lighthouse still stands on its great hill of sand and rock like a sentinel of a forgotten army ready to spring to arms when called.

Stretching inland behind the original lighthouse is a great dune, or rather a mountain of sand, which has been the savings bank of the winds for untold centuries. The dune is more than 100 feet high in many places, and the great plateau on its crest, stretching back into the country for several miles, covers an area of many acres. Slowly but surely the great mass of sand crystals is making its way toward the interior, being pushed back inch by inch by the restless wind, and it is mercilessly engulfing a great pine forest, stretched by a kind Providence across its path, but in vain, for, indeed, nothing seems to successfully withstand its relentless, onward march; it is even rapidly filling up the Lynnhaven River, a small fresh-water stream famous for its splendid oysters, which seeks to bar its progress.

The advance of the giant sand dune greatly resembles the movement of a glacier, except that the sand engulfs its prey without sound or groan from either the victim or the conqueror.

### A FAR-FLUNG BATTLE LINE

The formation of the beach immediately guarded by the Cape Henry light is not changing so rapidly as is the case only a few miles on either side because of its somewhat protected position, due to the many sand bars or reefs far out from shore, which, acting as the first trenches, serve to break the charge of the white horses of Father Neptune as they dash in from the ocean, and, because

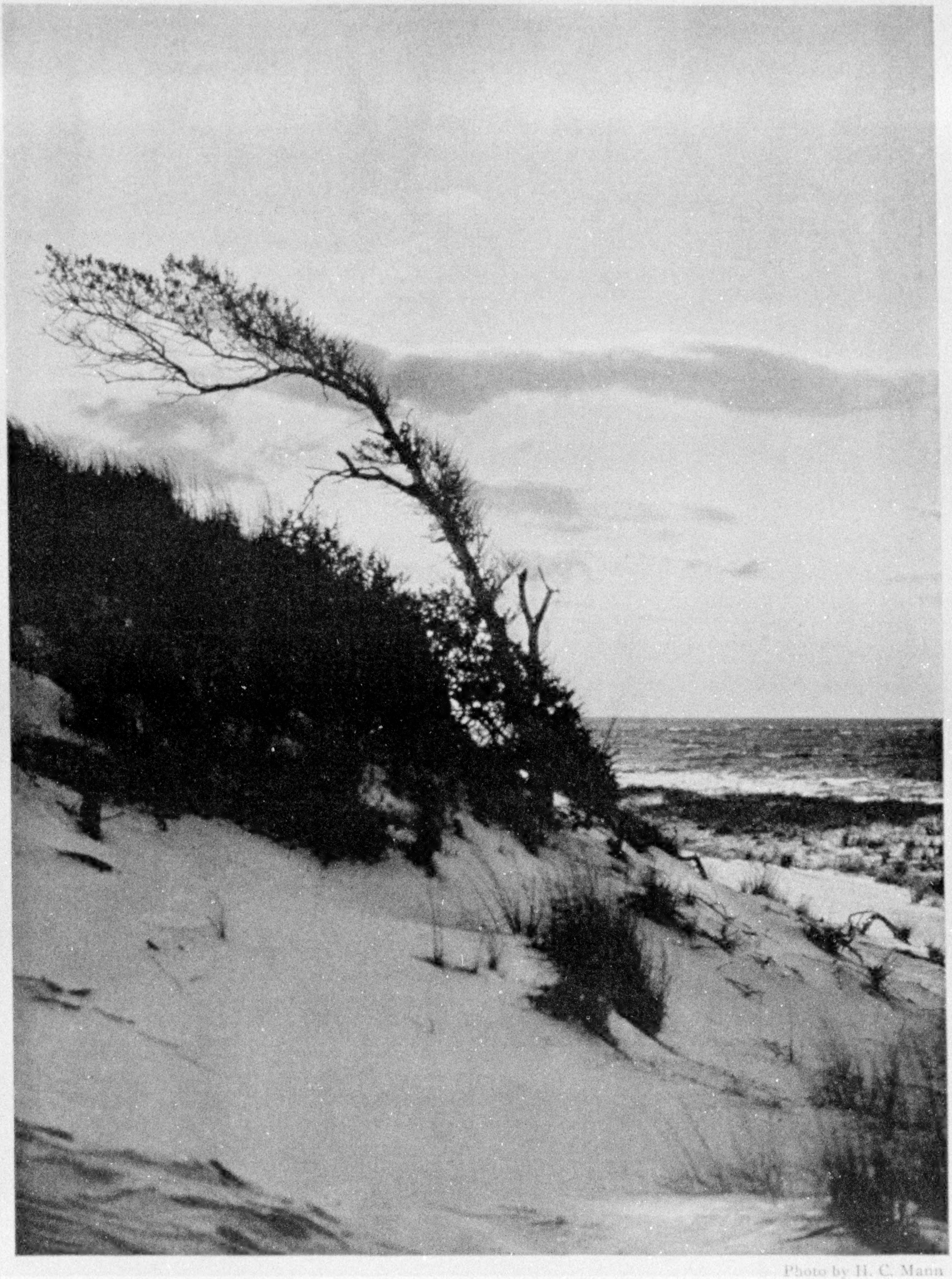

Photo by H. C. Mann

A BEACH SENTINEL

Standing alone on the beach edge and unprotected from the attacks of the wind enemy, the tree fights for its life winter and summer. Note that the branches and limbs grow on the lee side, while the trunk is permanently bent by the force of the wind.

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Photo by H. C. Mann

A GLIMPSE OF THE SAND BEACH IN WINTER

of this knowledge of defense, it is plain to be seen that a good quarter of a mile of beach has been added by the defender since the old light was erected.

The War Department, having realized the great value of Cape Henry's position from strategic reasons, is preparing plans for fortifications which will extend for several miles along the beach at this point. So it is that a human ally has been enlisted on the side of the land army to fight with it side by side, and every resource of man will be brought into play in order to outwit the salt legions of the deep, who hereafter can only hurl themselves first upon the sand-reef outposts and then fruitlessly expend their remaining strength upon the stone ripraps of the human ally.

### ATTACKING THE ISLANDS OF CHESAPEAKE BAY

Even inland waters take their toll from the lands which border them and the islands which are surrounded by them. In the Chesapeake Bay one finds many instances of the constant attack and siege by the water enemy, and how these processes go on all the time may be strikingly shown by many of the old records.

When the United States survey of the Chesapeake Bay was made in 1848, the area now known as James Island was a peninsula, a narrow isthmus connecting the island with the mainland. In only 50 years this entire isthmus has been cut away, and a distance of a quarter of a mile now separates the island from the mainland. At the time of the 1900 survey of the Chesapeake waters the west shore of James Island had receded 500 yards beyond the head of the inlet of 1848. The inlet had been filled in and the sand-bar separating it from the bay had shifted eastward. In area the island had decreased from 975 acres in 1848 to 555 acres in 1901. During the succeeding nine years it was cut down to 490 acres. So one can see that in 62 years 485 acres, or nearly half of the island, disappeared.

In 1849 Fishing Point, on the eastern shore of Maryland, was but a bend in the coastline. By 1887 we find that it had reached out two miles in a southerly direction, and since then it has gone more than a mile further, sharply curving to the westward.

Near the mouth of the Choptank River, on the eastern shore of Maryland, is located what is left of Sharps Island, at one time the home of a summer colony, where many national celebrities hunted and fished in bygone years. The island is washing away so fast each season that it is now estimated that in 27 years the last acre of it will lie submerged under the waters of Chesapeake Bay. In the earlier days the north end of Sharps Island was well wooded and a favorite spot for hunting duck and other small game. Today life on the island is but a memory, save for an artesian well which, having been transgressed by the sea, now presents the unique feature of a well in the midst of the salt waters of the bay. The trees have vanished and the houses have been washed away, and only the crumbling ruins of what was once a spacious hotel remain to tell the story of the one-time prosperous island, which has for years been slowly yet surely sinking beneath the waters. In 1848 the island covered an area of 438 acres, while in 1910 only 53 acres remained.

### A RELENTLESS TAX COLLECTOR

Tilghmans Island, which lies about 50 miles south of Baltimore, is three and one-half miles long and provides homes for many farmers and fishermen. At the north end are the towns of Tilghman and Avalon. The island is separated from the mainland by Knapp Narrows. Since 1848 the owners of the lands of the island have had to pay a very heavy tax to the sea. In that year the area of their joint holdings amounted to 2,015 acres; in 1900 the tax collector of the winds and waves had cut these holdings down to 1,686 acres, and since 1900 the work of erosion has been going on at the rate of 29 feet a year.

Not only have the islands of the Chesapeake Bay suffered, but the mainland as well. Cooks Point has been losing about two acres a year. Ragged Point has been cut away at the rate of about 14 feet a year. Nelson Point has had to surrender a quarter of a mile of its territory in a single generation.

Nor is the work of erosion confined to the bay; it also spreads up the mouths of the rivers and creeks. Willeys Island, at the mouth of Broad and San Juan creeks, has lost 40 acres, or half its area, in 50 years.

A very careful study in matters of erosion is being made in the region around the mouth of the Choptank River by the State and the United States Coast and Geodetic surveys, with the hope of mastering the details of erosion by evolving better methods for combating the encroachments of the water enemy.

### WAR'S RECORD IN THE SAND

Rockaway Beach, Long Island, grows westward at the rate of nearly a mile every 20 years (see chart on page 206). At Nag Head, North Carolina, the land has extended into the sea at the rate of 35 feet a year. In 1804 Dr. Nathaniel Bowditch prepared a chart of Salem and Marblehead harbors, giving the soundings over various ledges of rock. Ninety years later similar soundings were taken, and in all cases the water was found to be considerably deeper, once again telling the tale of endless warring.

On the shore of Cape Cod, near Chatham, the land is retreating at the rate of a foot a year, and on the southern shore of Martha's Vineyard it is giving up the fight to the enemy at the rate of three feet every 12 months, while on the southern face of Nantucket the retreat has been as much as six feet a year, the records tell us.

Unfortunately, in the United States we have no definite records by which to ascertain the aggregate gain or loss of area that is taking place on our seaboard as a result of this warfare between the land and the sea. In England, however, where more attention is given to the matter, the total has been figured out, and it is reasonable to suppose that the figures offer a fair average of the yearly change. One

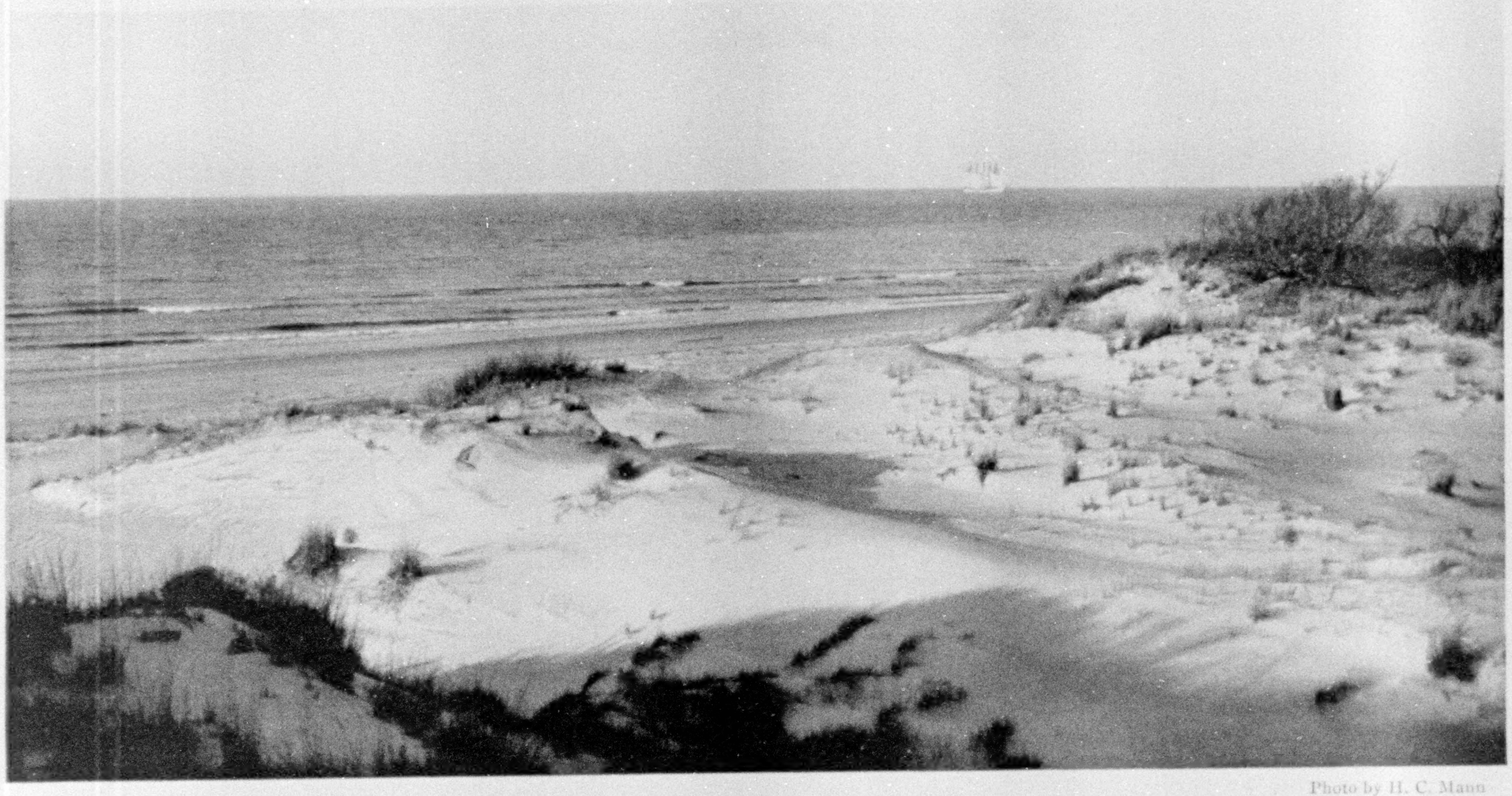

Photo by H. C. Mann

THE LOW-LYING SHORE-LINE OF THE SOUTH ATLANTIC

The wiry beach-grass seed, dropped by the passing bird or blown from inland, grows readily on the sandy shores, and by its interlacing rootstocks creates a binder and anchor for the wind-driven sand

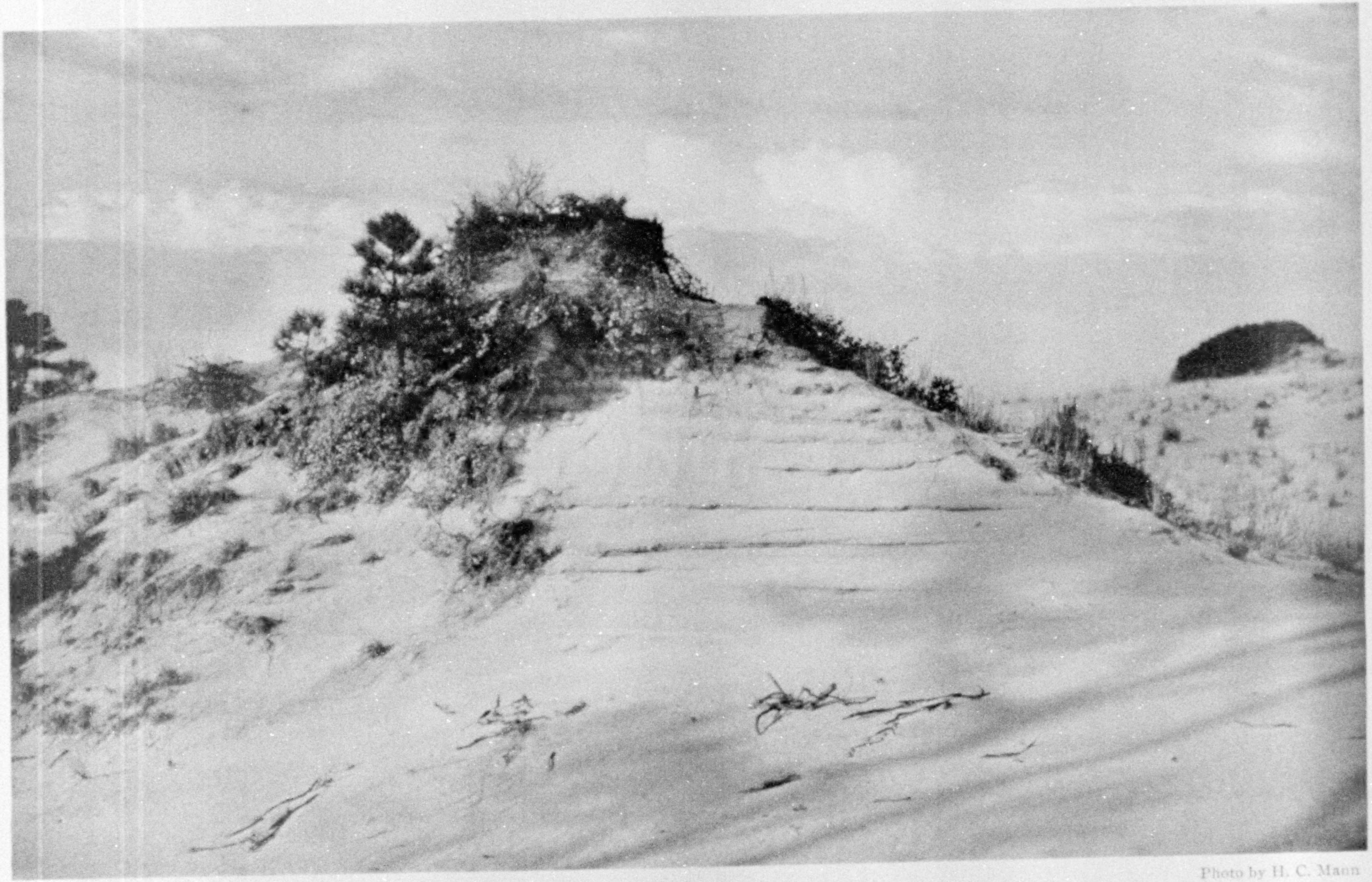

Photo by H. C. Mann

A FORTIFICATION OF THE LAND FORCES

Starting perchance with a piece of driftwood or wreckage thrown high up on the beach by the tide, the sand is offered a chance to rest, and in time the dune grows. Thus are the land defenses builded, and they catch and hold every wind-blown passerby, be it shell, twig, or sand crystal

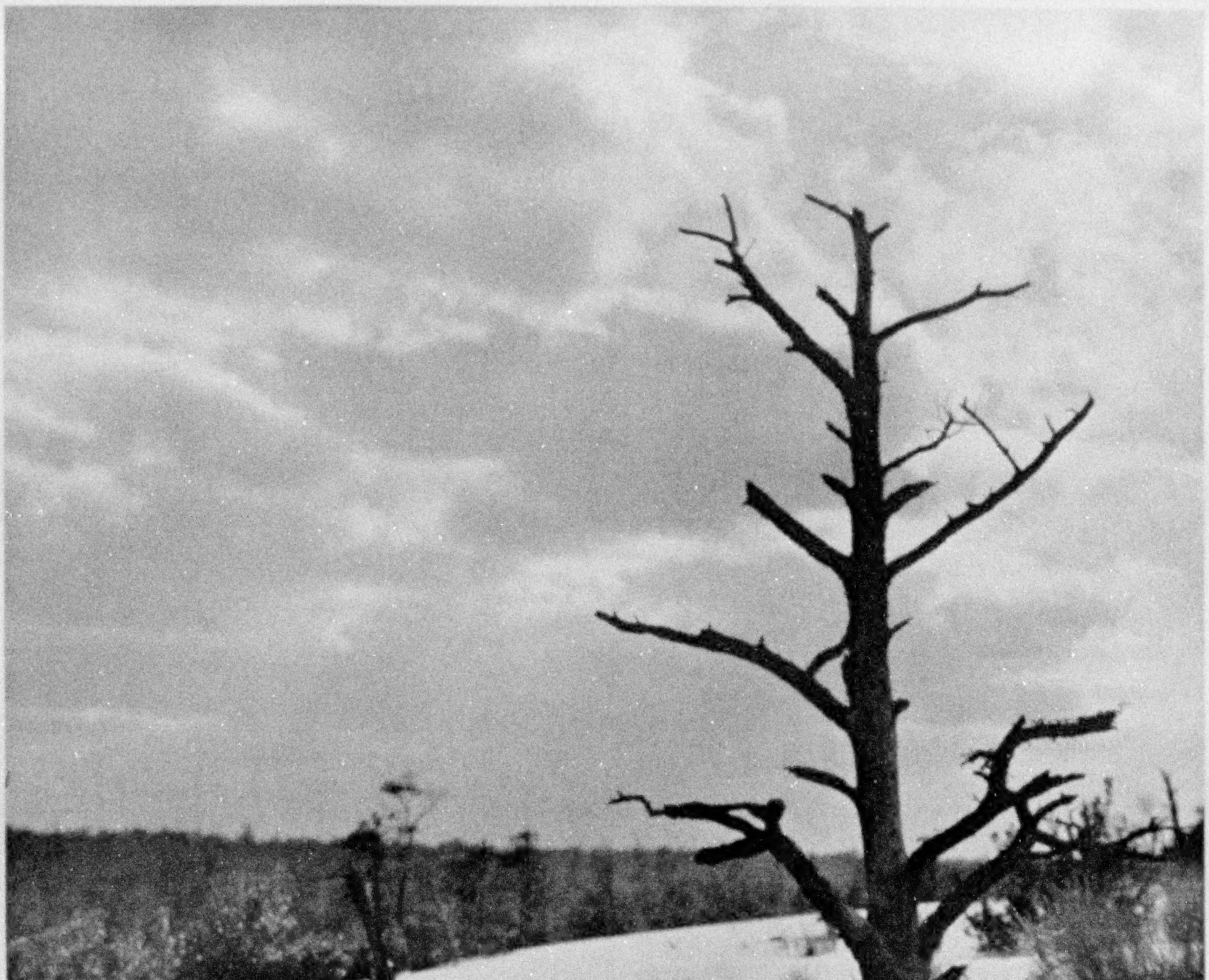

Photo by H. C. Mann

ON THE EDGE OF A TRAVELING DUNE

authority who gathers statistics on the subject says that every year England loses a tract of land larger than Gibraltar, and the English east coast alone is deprived of a tract larger than half of the area of Heligoland. The same authority estimates that, since Waterloo, England has lost to the sea a fragment of its territory larger than the county of London.

### ONCE A DEER PARK, NOW AN ANCHORAGE

The Anchorage Basin, off Selsey in Sussex, is still called "The Park" because it was once a shooting preserve of Henry VIII, who filled it with deer, and as further proof old court records show that certain deer stealers were severely dealt with for poaching in its confines.

In a great number of instances along the Atlantic coast of the United States one may see lands in the process of disappearing and others coming to the surface or shifting their positions. Sable Island, in the mouth of the St. Lawrence, is gradually being banished from the map by the attrition of the sea; No Man's Land, a lonely island on the Massachusetts shore, is yielding ground inch by inch, and it is estimated that before the second centennial of Waterloo it will have entirely disappeared from the face of the earth.

From Portland, Maine, to Cape Florida there is a fairly well connected barrier of sand-reefs, all of them built up by the sea and its ally, the wind, from the material pounded from the shore-line by the waves. From Chesapeake Bay to Biscayne Bay, Florida, a distance of 700 miles, there is a natural rampart of sand so continuous, fencing such an unbroken series of lagoons in from the sea, that it is possible to make the entire journey through inland waters without exposure to the open sea.

### JACK-IN-THE-BOX ISLANDS

We need only to turn to our Alaskan possessions to see that other sort of appearance and disappearance that has turned the bed of the sea into mountains and mountains into the bed of the sea. In the Aleutian Peninsula are found the Bogoslof group of islands, some of which have for many years been playing "jack-in-the-box," with the sea for its audience. Now and then one of these islands sinks away, and where land was there comes a void of water. Years pass, a submarine volcano comes into play, and where yesterday there was water, today a volcanic peak towers high above the waves, uncharted and unknown until reported by some surprised and mystified mariner.

In its incessant warfare against the land, the sea literally takes its captured hosts and makes them do battle under its command. The boulders that are shattered from the face of a cliff are dashed up against it again and again, hammering others loose, the while being worn round and smooth as the projectiles of big guns must be. As the process goes on, these huge shells are worn down and crumbled until there remains nothing to tell the story of forced fighting against their own stronghold, save grains of sand on some distant beach or the soft carpet spread upon the floor of the sea many fathoms deep.

How rapidly this process goes on is sometimes strikingly shown. A schooner laden with bricks is beached on some bare shore in a storm; these bricks are rolled and tumbled a distance of five miles or so in the course of a year, and by that time attrition has usually completed its work. Authorities say that on the shores of Cape Ann a fragment of stone as big as a nail keg has been worn completely round by its constant turning during the course of but five years.

### A ROVER'S FATE

Some years ago there was discovered in the British Records Office an elaborate map of the North American coast from Cape Cod to the Navesink Hills, which is believed to date from about 1715. It gives a wonderful illustration of the changes that a coastline may undergo in 200 years. To begin with, it shows that Cape Cod was at that time an island, and that near the point where the new Cape Cod Canal now cuts off the toe of the peninsula there was a natural passage from the Atlantic to Cape Cod Bay. The point is located where the channel existed, and the following notation was put in by a

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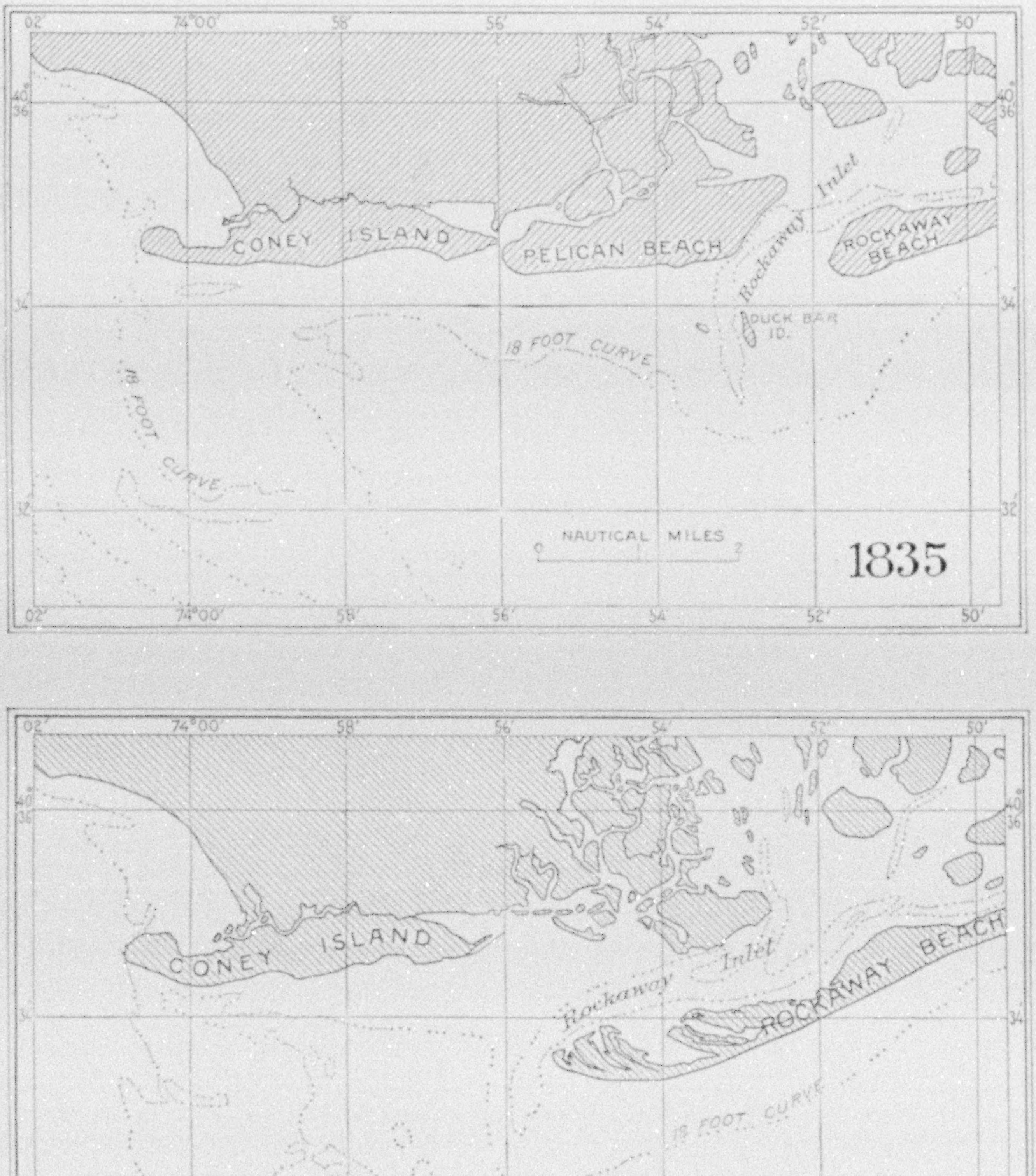

CONEY ISLAND
PELICAN BEACH
Rockaway Inlet
ROCKAWAY BEACH
DUCK BAR ID.
18 FOOT CURVE
NAUTICAL MILES
0
1
2
1835
ROCKAWAY BEACH
1908
74°00′
58′
56′
54′
52′
50′
02′
40° 36′
34′
32′

Charts from George R. Putnam

MOVEMENT OF ROCKAWAY BEACH AND INLET FROM 1835 TO 1908 (SEE PAGE 201)

British officer, probably Capt. Cypian Southback, sent out to capture Bellamy, the pirate:

"Ye place where I came through with a whale-boat, being ordered by ye Governor to look after ye pirate ship *Whide*, Bellamy, Commander, castaway ye 26th day of April, 1717, where I buried one hundred and two men drowned."

On this chart the islands of Nantucket and Martha's Vineyard are shown as a group of six islands. A very great number of other changes in shoreline topography are noted.

### NEW JERSEY'S EVER-CHANGING BEACH

A survey of the coast of New Jersey shows strikingly the results that are wrought upon a shoreline by the wind and the waves.

The beaches for the most part are being driven back by the sea, but the harbors, which were accessible to coasters quite within the memory of men now living, are being closed by the traveling drift, just as most of the mouths of the streams emptying into the ocean have been closed and salt-water marshes formed.

In a description of the Jersey coast, published in 1879, it was stated that, prior to the War of 1812, Old Cranberry Inlet was one of the best anchorages on the coast, and it afforded a safe harbor for American privateers on the lookout for British ships during the Revolution. It opened one night by the angry sea breaking across the beach, and during the last year of its existence as a harbor the whole channel drifted nearly a mile to the northward. Its closure, about 1812, caused so much inconvenience that, in 1821, one Michael Ortley attempted to cut a new inlet near the head of Barnegat Bay. With the assistance of others, it was finally finished; but the following morning, to the amazement of the voluntary workers, it had closed up again. Later another effort was made to effect the same thing lower down the bay. The cut was completed July 4, 1847, the work being done by several hundred men under Anthony Ivens, Jr. The water was let in, and the entire community sent forth its thanksgiving, but quite too soon, for it filled up almost as quickly as the Ortley cut, so relentlessly was the sea's war carried on.

A few years ago Louis M. Haupt made a report on shoreline changes in New Jersey, and called attention to the fact that the charter of Atlantic City, published in 1854, "lays out metes and bounds, with no accessible point of beginning or permanent corner, without a course or a distance, and no well-defined contents." He then adds, "This tract of land on a shifting island is set apart as constituting the site of one of the most popular seaside resorts in the world," the legislature of New Jersey having assumed that Father Neptune's forces will never dare to disturb the site!

A survey at Atlantic City, in 1863, revealed the fact that in the course of but a few years the shore at Maine avenue had lost 76 acres. True, most of this material was deposited in the lee of the point extending from New Jersey to Ohio avenues, causing an advance of the beach lines at Pennsylvania avenue of about 1,000 feet and adding to this part of the plat some 56 acres, all in the brief space of a decade. This transfer of property from one riparian owner to another without consideration is not provided for in the statutes, but might properly be regarded as inequitable, especially to the original owner. However, no one has yet gone into court for an injunction against the sea for thus robbing Peter to pay Paul.

### A VICTORY FOR MAN

When the lighthouse at Atlantic City was threatened, in 1878, the United States challenged the sea by the construction of a jetty at the head of Atlantic avenue. Thus was inaugurated a series of defensive works, which have been continued from time to time by individuals, so that 82 additional acres have been reclaimed from the sea to the great benefit of the city, as well as to that of the riparian owners; but they had to fight hard for every inch.

The changes in the coastline seem partial to no particular locality. At Ocean Grove, New Jersey, and at Point Pleasant investigation shows traces of tide-

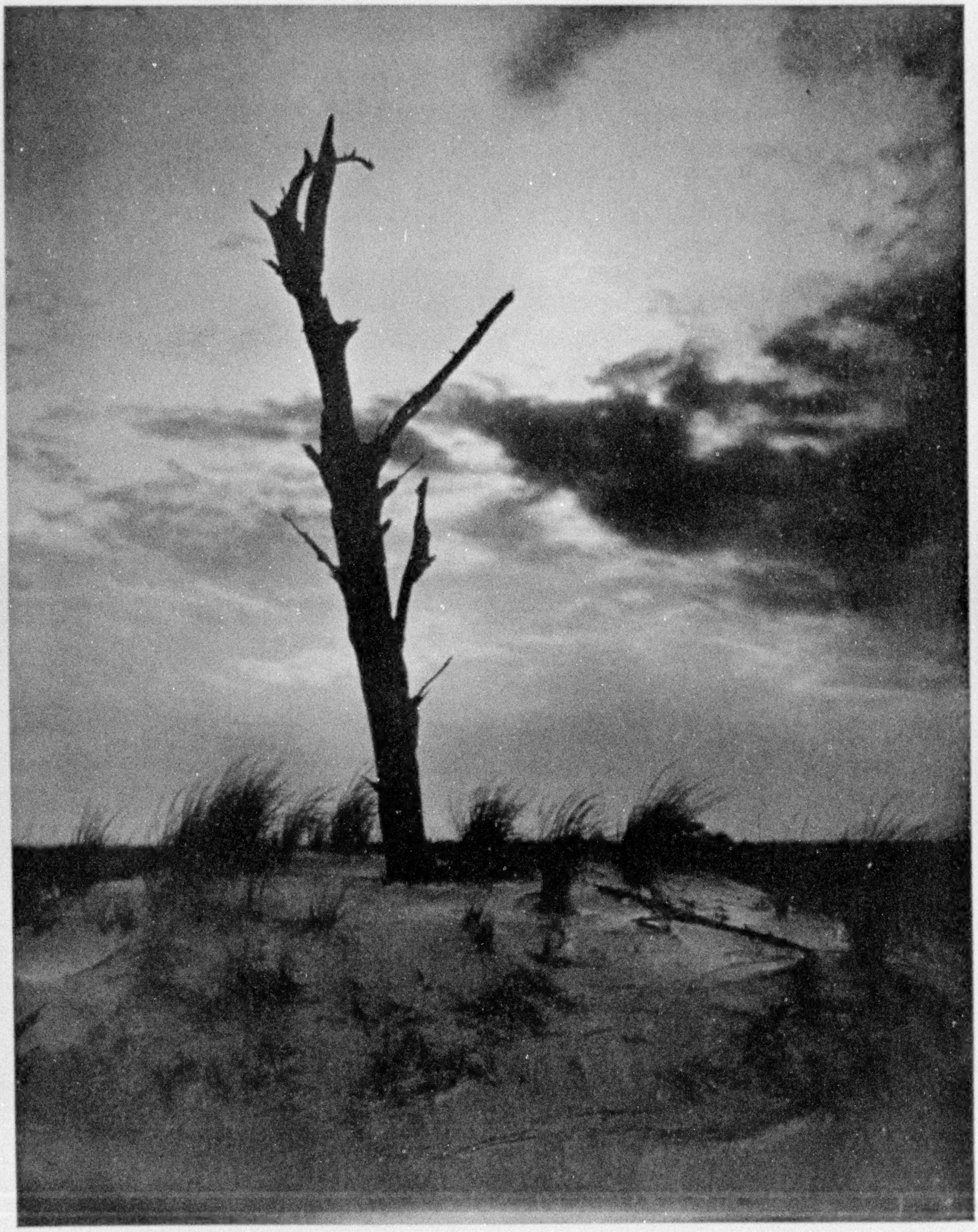

Photo by H. C. Mann

WHEN EVENING SHADOWS FALL

marks in places fully a mile inland. At Absecon houses now stand at a point that was low tide in 1850, while Sandy Hook is now nearly 1¼ miles northwest of its stated position in 1764, when the lighthouse there was built.

The shifting of the sands of the seashore very often involves expensive litigation. In 1885 the counties of Atlantic and Burlington of New Jersey entered into an expensive litigation concerning the boundary between them. There was a dispute as to one of the corners of this boundary. It was stated to be, in the original survey, "the next inlet in the south side of Little Egg Harbor's most southerly inlet, and thence along the seacoast to the line of partition between east and west Jersey." But it could not be found in its original home when they went to look for it, thus bringing up to date the ancient saying about a rope of sand.

### THE TERRIFIC WAVE FORCE

The unusual force with which the sea attacks the shore is revealed by a series of investigations made in Great Britain. These show that winter breakers which exert a pressure of three tons per square foot are not unusual. Sometimes these breakers have been so powerful that they have moved blocks of rock exceeding 100 tons in weight. Ground-swells sometimes cover the cliffs of northern Scotland with sheets of water as high as 200 feet, while the Dunnet Head lighthouse, whose windows are nearly 300 feet above high-water mark, has occasionally had its windows broken by stones swept up the cliffs by sheets of sea-water. It is estimated that the average force of the waves on the Atlantic coast of England is a ton per square foot throughout the winter months, but much less in summer.

The waves always find a most valuable ally in the wind while their work of coastline transformation goes on. The possibilities of the wind as a worker in conjunction with the waves are revealed when we consider that during a violent storm the air may hold in suspension as much as 126,000 tons of sand to the cubic mile. This sand, driven hither and thither, finds a resting place somewhere, and that resting place is usually a dune along the shore.

### THE CAVALRY OF THE ALLY

A sand dune always has a humble beginning. A piece of wreckage cast up by the waves may start it, or any sort of obstacle lying upon the shore may cause it to come into being. Once started the dune becomes a trap to catch sand in. It takes its toll of every passing gust of wind, and thus continues to grow and grow. Often they keep advancing until they bury orchards, forests, and even buildings, like great drifts of snow (see page 203). Along the coast of New Jersey one may see orchards which have been covered by wind-blown sand within the memory of man so that only the tops of the trees now protrude above the surface. It is not exceptional to see a forest invaded (see page 210) and sometimes even completely buried. To watch the struggles of the trees against their encroaching enemy is one of the most remarkable sights of nature. As the sand rises around their trunks new roots are put out near the surface, and they continue to fight their battle month in and month out, but generally they are finally completely engulfed.

Trees which are in process of being buried under sand are equipped to make a stubborn fight for their life; on the other hand one buried under water gives up the ghost as soon as the water rises above its roots. A water-submerged forest was never seen anywhere to better advantage than at Panama when the waters of the Chagres River were impounded in Gatun Lake.

The alternating burial and resurrection of forests is due mainly to the tendency of sand dunes to migrate. On Hatteras Island, North Carolina, the migration of a dune literally robbed a cemetery of its dead, dashing down the gravestones and exposing the bones of the bodies buried there, says Professor Cobb, an authority on the subject of beach formations.

On the northern end of Hatteras Island a fishing village has been completely buried, while the sand has entirely crossed the island at several places north of Cape Hatteras. This movement of sand was

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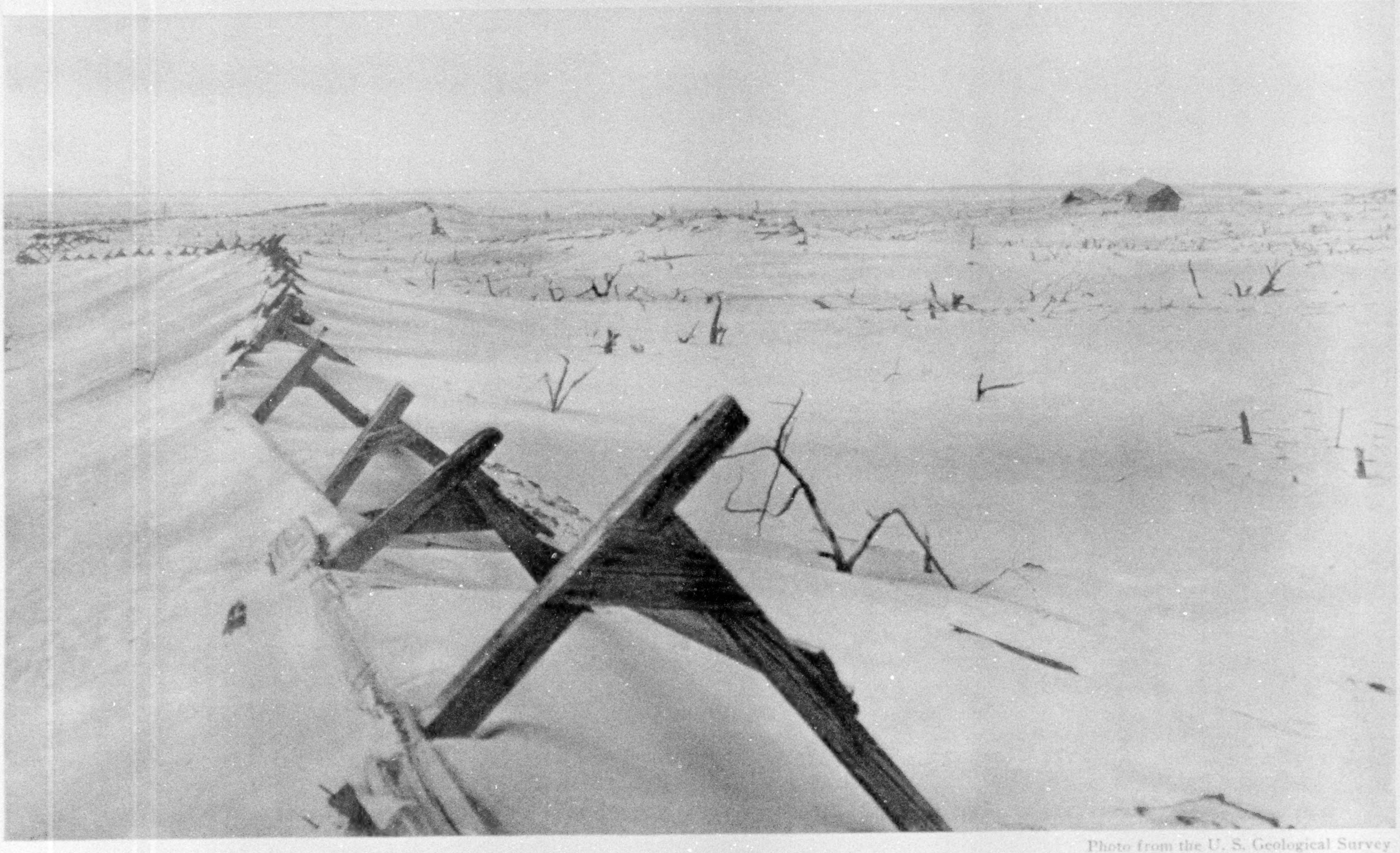

Photo from the U. S. Geological Survey

A TRAGIC SAND VICTORY

The barrier in this picture shows how man has come to the aid of the earth in its attempt to resist the invasion of the sands. The picture represents a forest buried by the crest of a sand wave on Shackleford Island, near Cape Hatteras. As it advances the wave buries everything in sight—house, field, and forest alike. In its rear it leaves, in turn, uprooted trees, undermined houses, and graves that have been forced to give up their dead.

started just after the Civil War by the cutting of trees for ship timbers, and, although the section is known today as the Great Woods, there is not a stick of timber to be seen.

### HOW MAN'S FIGHT IS MADE

The men who live along the seashore have learned, in a measure, how to combat the migration of the sands. While in some instances there are kinds of wind breaks which have helped, the most effective mode of warring against the migrating tendencies of the sands is found to be that of employing plant life as an ally. Various kinds of grasses and rapidly growing trees which flourish in sandy soil have been planted over the dunes, and as they take root they bind the sands to earth and prevent them from blowing away. This method of combating the shifting spirit of the sand dune has been more widely used in Europe than in America, yet everywhere that it has been employed it has given the most excellent results.

Another force, indirectly related to the wind and the wave, which has done much to alter the shoreline of the world, is the erosive power of running water.

### THE POWER OF RUNNING WATER

It is estimated that the rivers of the earth carry 6,500 cubic miles of water to the sea every year. If the reader can imagine a column of water 10 miles square and reaching 65 miles skyward, he will get a fair idea of the tremendous work that the sun and the winds have to do in pumping up this water out of the sea and carrying it over the earth. Perhaps a third of this is expended on the landed area of the earth. Imagine a falls half a mile high and as large as 10,000 Niagaras tearing away at the continents every day and wresting material from them and transporting it to the sea. This represents the work of the running waters. The Mississippi River alone carries more than 1,000,000 tons of material to the Gulf of Mexico every day. It would require nearly 1,700 Lidgerwood dirt trains, such as were used at Panama, to move each day's deposits that the Mississippi brings to the Gulf. The total bulk of material removed annually from the Mississippi Valley into the Gulf through the Mississippi River is greater than the total amount of material removed from the Panama Canal, as it stands today, by the French and the Americans. In view of this fact the statement of General Goethals, the builder of the Panama Canal, that the man who attacks the task of deepening the Mississippi River will have the biggest engineering job ever undertaken by man, indeed becomes significant.

### THE WORK OF CONTINENT BUILDING

How rapidly the Mississippi is carrying forward its task of changing the shoreline of Louisiana is revealed by the fact that it is building a mile of Louisiana territory into the Gulf every 17 years. Its delta, assuming that a delta begins at the first point where a break occurs and river water escapes to the sea, is now more than 200 miles long. This territory, which has been entirely built up by the river, now contains nearly 12,000 square miles, making it equal in size to the State of Maryland. For every fifteen hundred pounds of water that the Mississippi carries to the sea it carries one pound of material, either solid or in solution. It carries down to the sea nearly eight times as much material as the Nile, whose alluvial burdens have enriched Egypt for thousands of years.

### THE EARTH'S RESPIRATION

Another agency that has had wonderful effect on the shorelines of the earth is that of the alternate subsidence and elevation of lands. There are many scientists who say that a large portion of the eastern coastline of the United States is now undergoing a subsidence, and they point to many remarkable facts in support of that theory. For instance, at a navy yard on the New England coast, it is shown that high and low water marks have shifted in recent decades. There are those who claim that this merely indicates a compression of the land and not a subsidence. But this objection is answered by the statement that while high and low water marks have shifted, points on shore bear identically

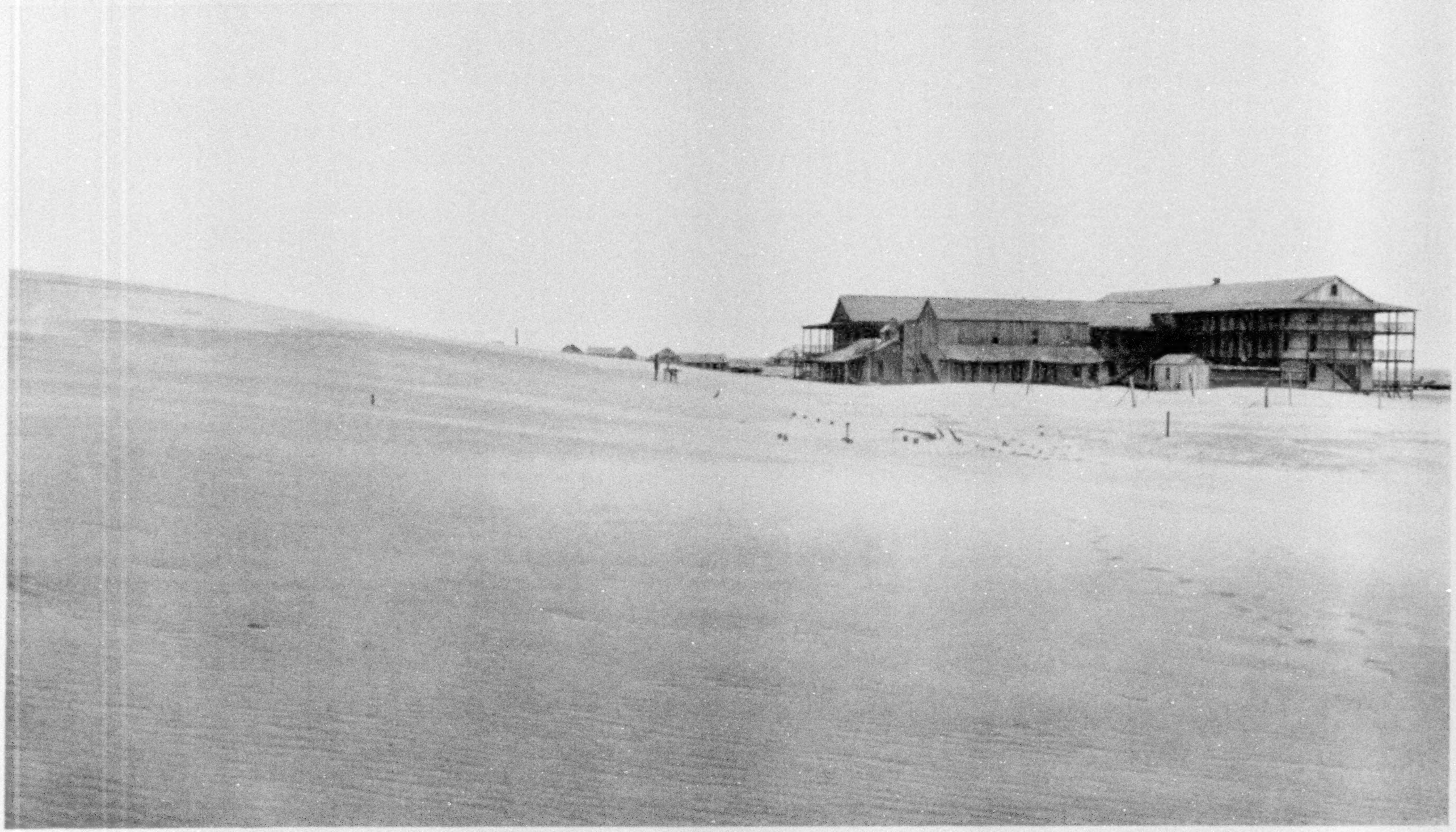

Photo from U. S. Geological Survey

AN INVADING SAND ARMY

The sloping stretch advancing on the buildings is not a snow-drift, but a shifting dune that has marched out of the sea. The photograph was taken at Nags Head, North Carolina, just off Roanoke Island, celebrated in history as the scene of Sir Walter Raleigh's unsuccessful attempt at colonization in 1585.

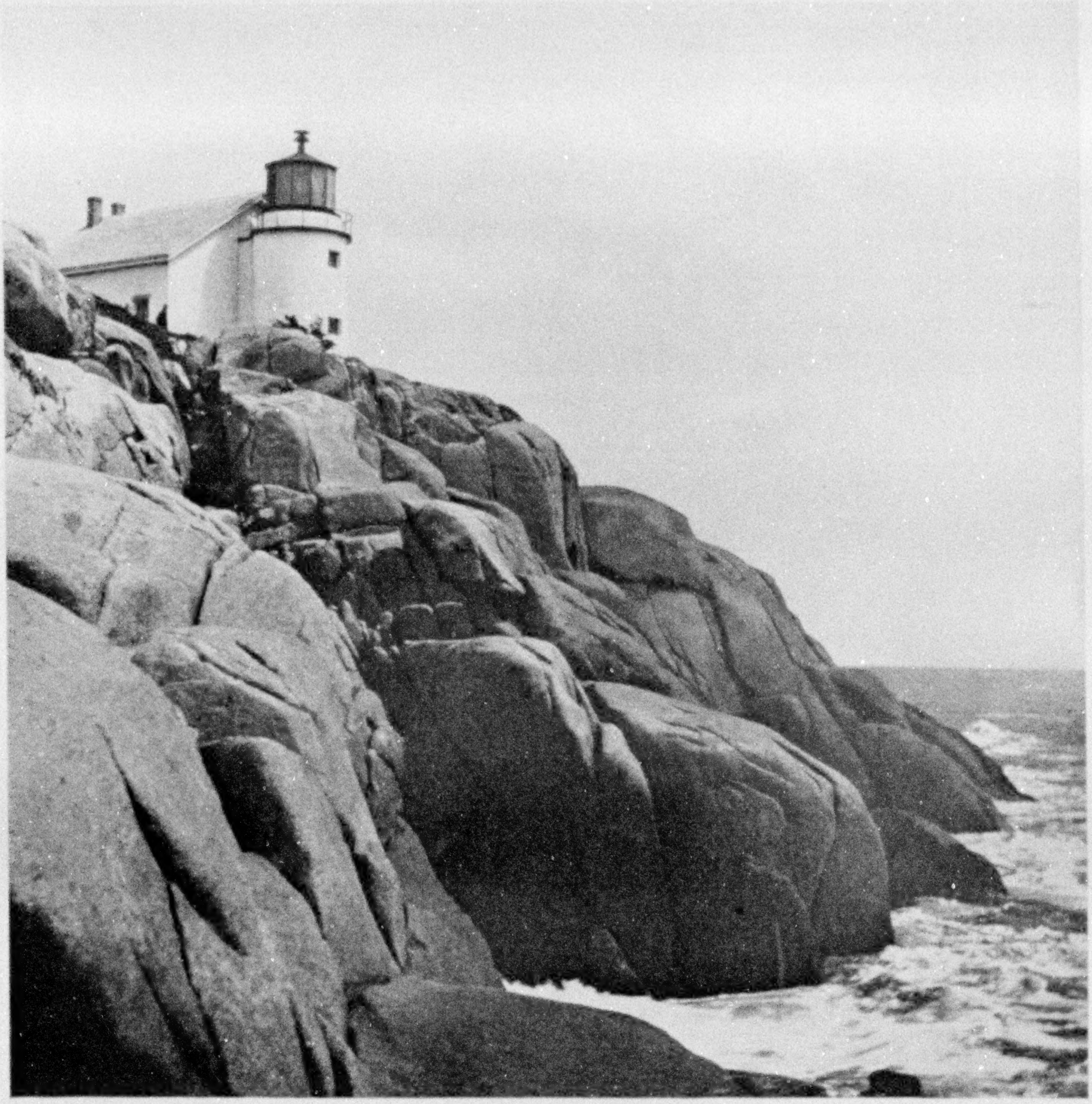

Photo from Bureau of Lighthouses

LIGHT STATION: HERON NECK, MAINE

Along the North Atlantic coast Father Neptune needs his heaviest guns, for the hard rock cliffs of the coastline offer great resistance to the attacking sea

the same relation to one another that they did before.

The geological history of the Panama Canal region well illustrates how the lands alternately subside and rise. On the Atlantic side, the fact that the ancient bed of the Chagres River is more than 100 feet below the present land surface was the principal cause of the fear in the minds of some engineers that Gatun Dam would not be stable. On the other hand, not far from Panama City, there is a beach where Indians formerly tied up their boats that is now many feet above the surrounding water and some distance back from the shoreline.

The charting of the 20-fathom line along the Atlantic coast from the North Carolina-Virginia boundary to Cape May reveals the fact that if the ground were to rise 20 fathoms or the sea to sink 20 fathoms there would be no Chesapeake Bay and no Delaware Bay. The shoreline between these points would be almost direct, with only very small, open bays and peninsulas. The geological history of the Chesapeake Bay region, in fact, shows that once there was no such

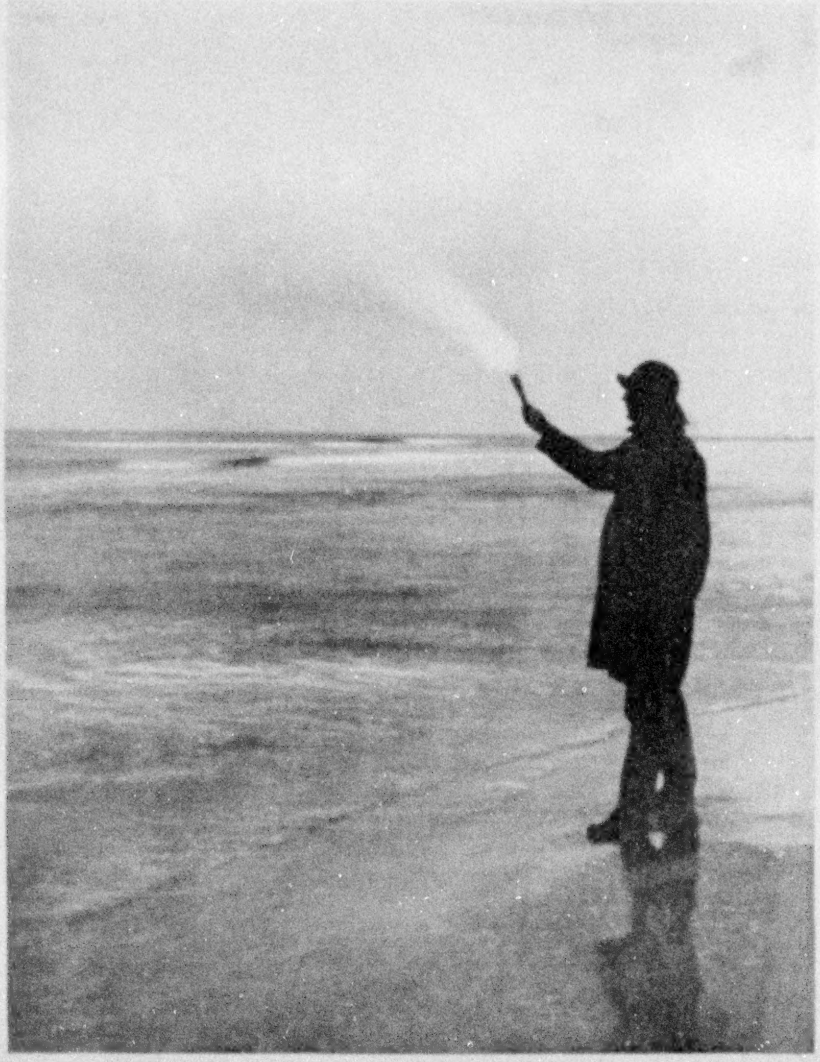

Photo by C. A. Harbaugh

THE WARNING

The splendid work of the U. S. Life Saving Service, now known as the Coast Guard, is familiar to all. During the night, winter and summer, in calm or in hurricane, or in case of stormy or foggy weather by day, a guard walks the beach between stations, ready to warn mariners too far inshore of the dangerous reefs by burning colored signals.

bay. The Susquehanna River in those times flowed to the sea between Cape Charles and Cape Henry. The subsidence of the valley let the sea-water in and drowned the Susquehanna out up as far as its present mouth. The Potomac River was then a tributary of the Susquehanna, as were also the James and the Rappahannock.

When we remember that subsidences and elevations of the land have been the rule and not the exception in the geological history of the world, and that careful studies reveal the fact that they are still taking place, and when we further recall all of the shoreline changes that are going on and which have been recounted above, it becomes evident that the geography of the earth is not a fixed one, and that while nature may change the boundaries of nations and empires more slowly than man himself is doing and has done, yet the process is going on with such vast and unmeasurable force that man is powerless to resist it, and at the same time unable to perceive it unless he calls history to his aid and measures in centuries instead of years.

The particular attention of the reader is directed to the photogravure series which follow. These unusually beautiful studies were made by Mr. H. C. Mann, who takes rank with the foremost photographic artists in the country.

* * *

Photo by H. C. Mann

SHELTERED FROM THE SAND ENEMY

Sunset on the little Lynn Haven River, near Cape Henry—not far from where the giant dune is attempting to force a passage from shore to shore and so continue its never-resting inland journey.

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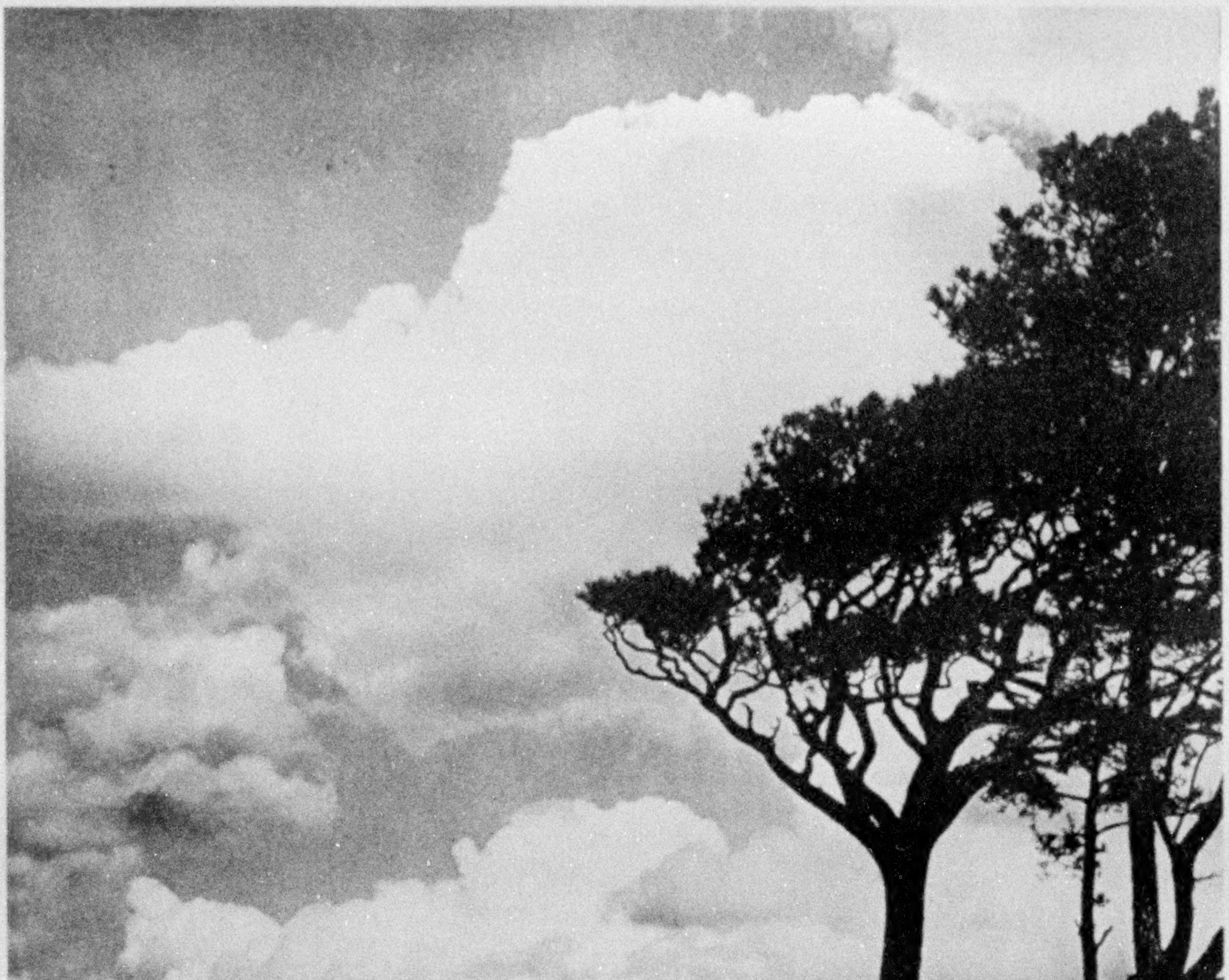

Photo by H. C. Mann

OUTRIDERS OF THE FOREST

Standing upon this little knoll of mother earth, these sturdy trees present a fair target for the enemy who, some day, will claim them as prisoners of war.

Photo by H. C. Mann

THE REAR GUARD

Well back from the beach, the pine forest edge offers great resistance to the sand migration, but slowly succumbs to the overwhelming force of the advancing legions urged ever onward by the wind ally.

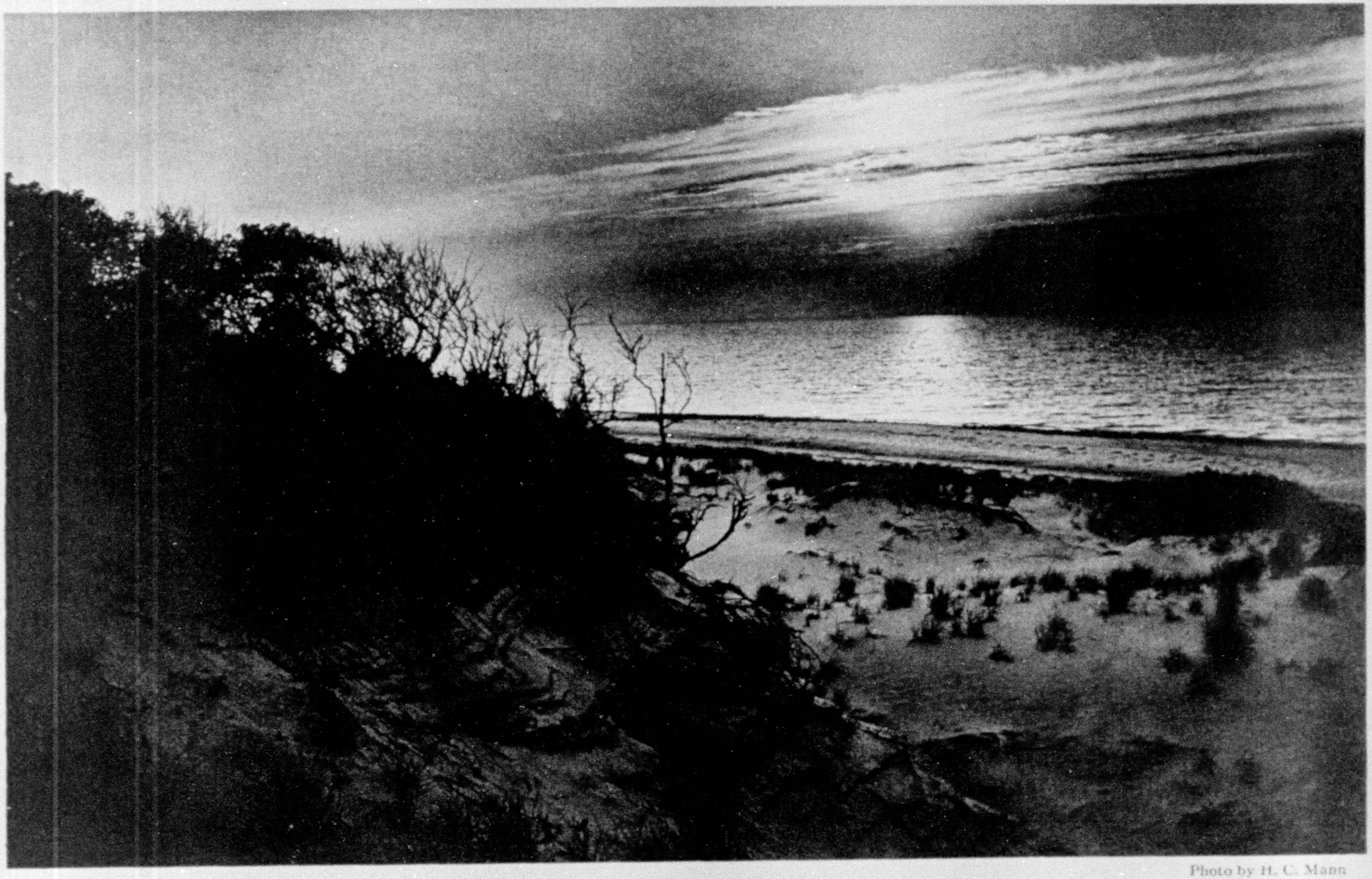

Photo by H. C. Mann

THE TRUCE

Peaceful it now seems, yet a few hours hence the battle for domain on one side and existence on the other may be raging, with no quarter asked or given.

THE SIEGE GUNS OF NEPTUNE

The terrific force with which the sea batters at the shoreline defenses can best be gathered from estimates which give the average force of the waves, during the winter months, on the Atlantic coast, as from one to three tons per square foot. Small wonder, then, that in time many citadels surrender.

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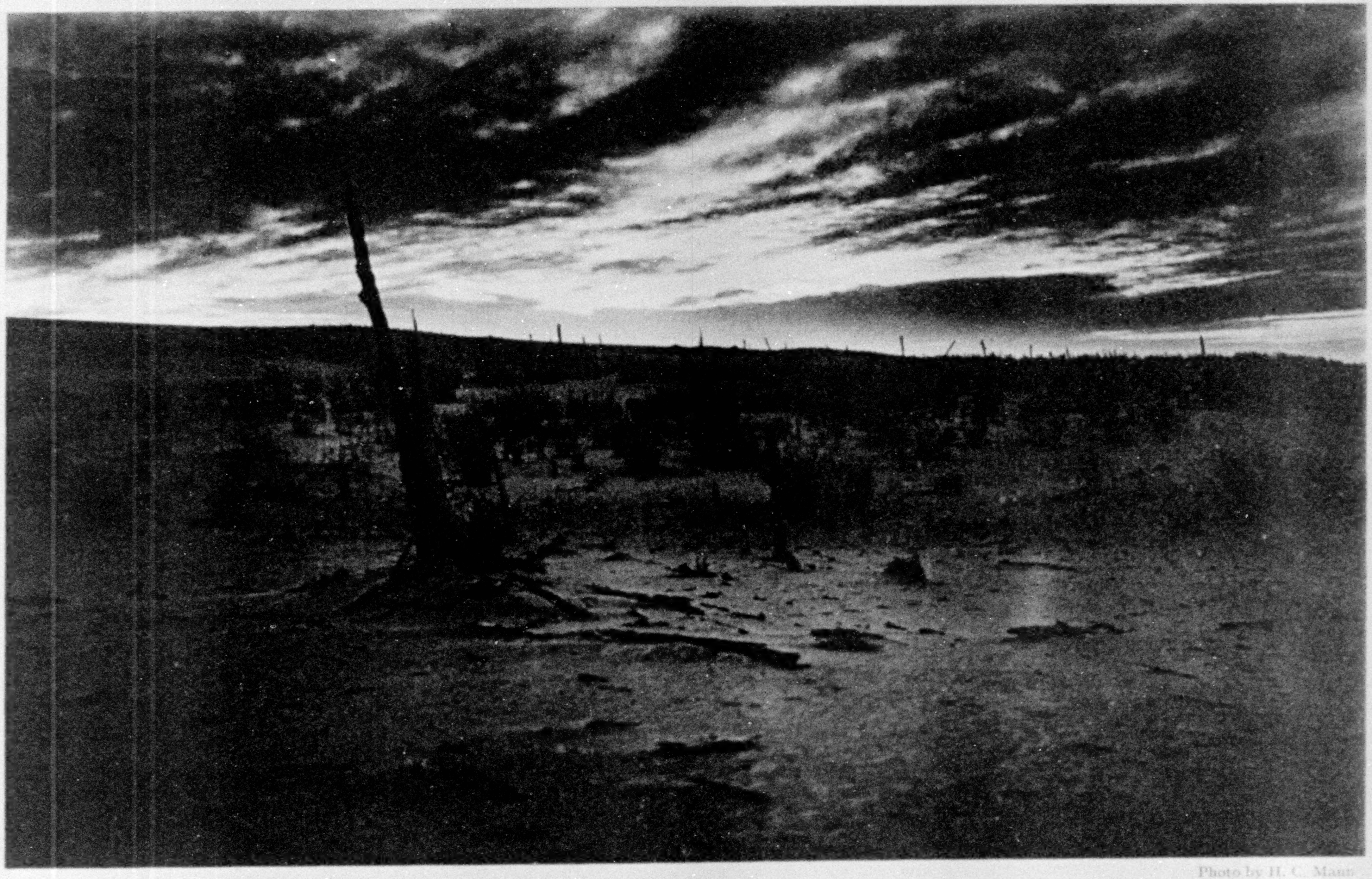

Photo by H. C. Mann

SENTINELS OF THE PAST

The battlefields of the coast war present a drear aspect when night approaches, for the remains of ill-fated trees take on the semblance of skeleton fingers pointed accusingly at the sky. This sand waste stretches inland for several miles at Cape Henry and is known locally as the Desert.

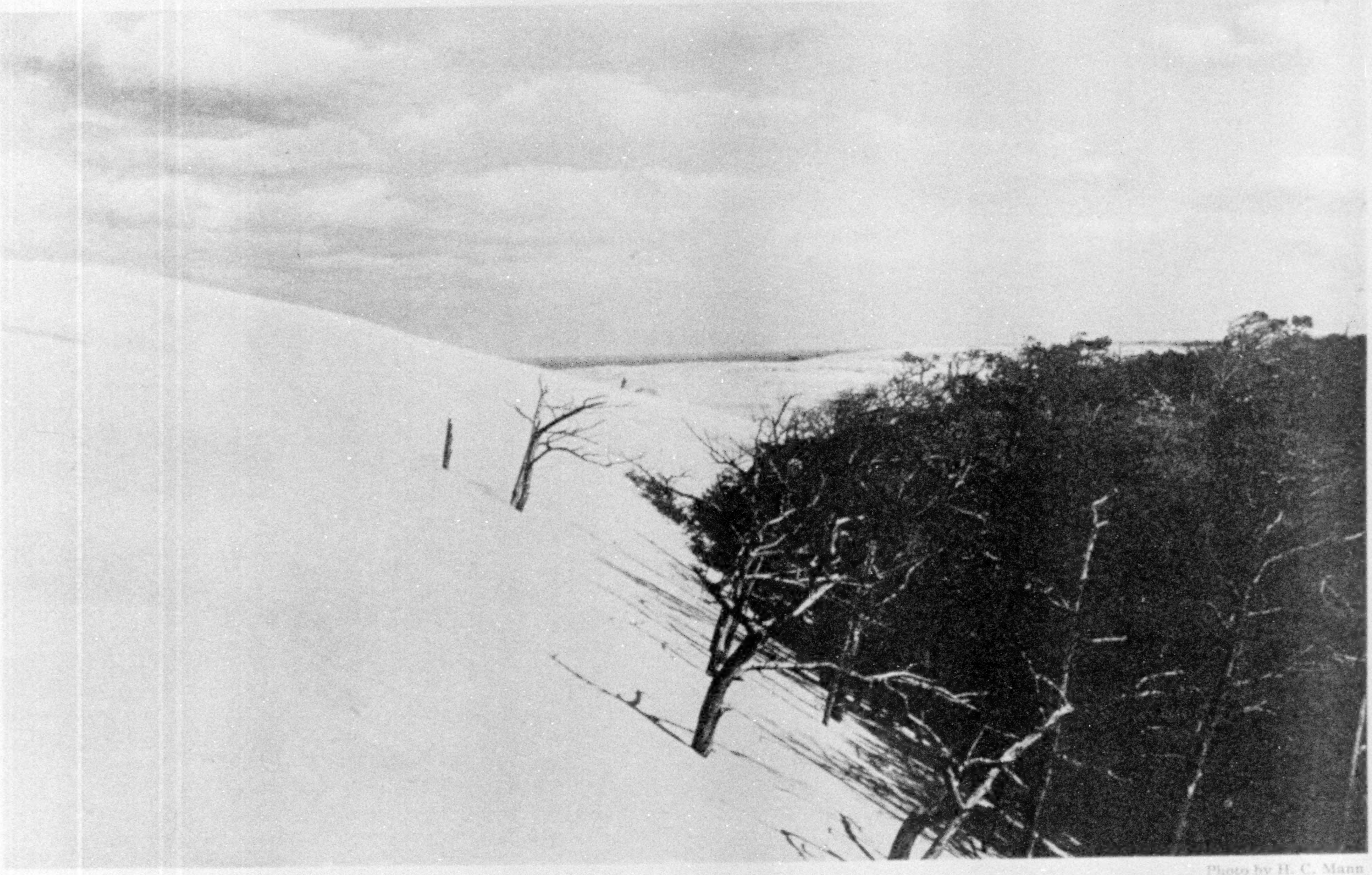

Photo by H. C. Mann

THE RELENTLESS ENEMY AT WORK

Slowly, but with never-ceasing force, the sand army advances to engulf the forest, and one by one the giants of the pine woods are giving up the ghost.

Photo by H. C. Mann

THE CHARGE OF THE OCEAN'S LIGHT CAVALRY

It needs only to hear the whistling signal of attack from its ever-changing ally, the wind, and then the heavy artillery of Father Neptune is rushed forward in a solid wall of foam-topped green and the skirmish line of light cavalry, having done its part, merges with the storming phalanx.

Photo by Putnam & Valentine

ADVANCING TO THE ATTACK

With the ever-shifting wind behind, the force of the water is gathered as it advances, and the encounter with the out-guard of sand reefs serves only to check its fury for the moment, as it hurls its strength upon the land enemy. Line after line makes its attack, and then falls back slowly with its captured ammunition.

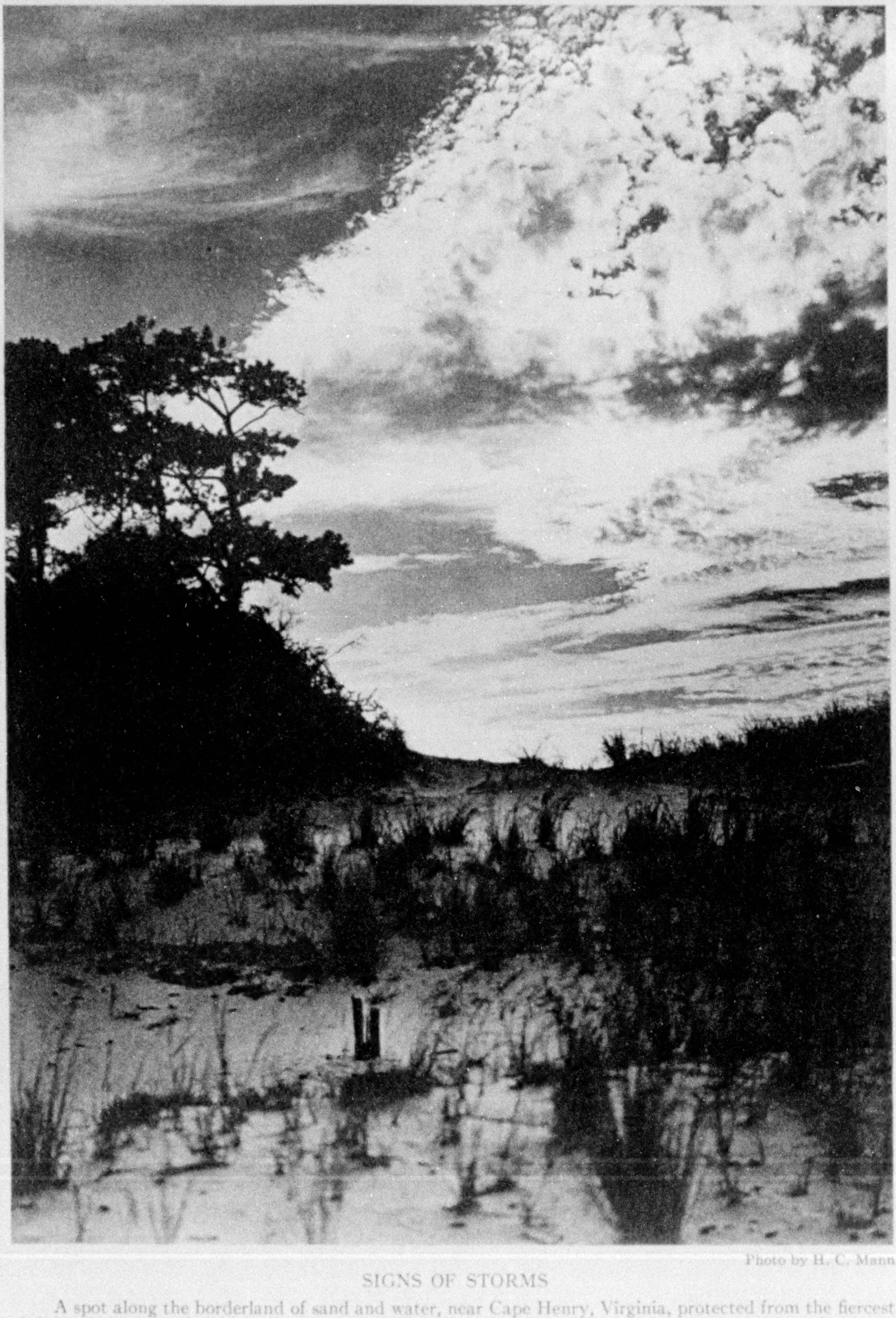

Photo by H. C. Mann

SIGNS OF STORMS

A spot along the borderland of sand and water, near Cape Henry, Virginia, protected from the fiercest fighting, being a few feet higher and back of the open beach. Here the tough beach grass and scrub make a determined stand.

Photo by H. C. Mann

A BATTLEGROUND OF NATURE

Along the beach at Cape Henry, Virginia, when the day is nearly done.

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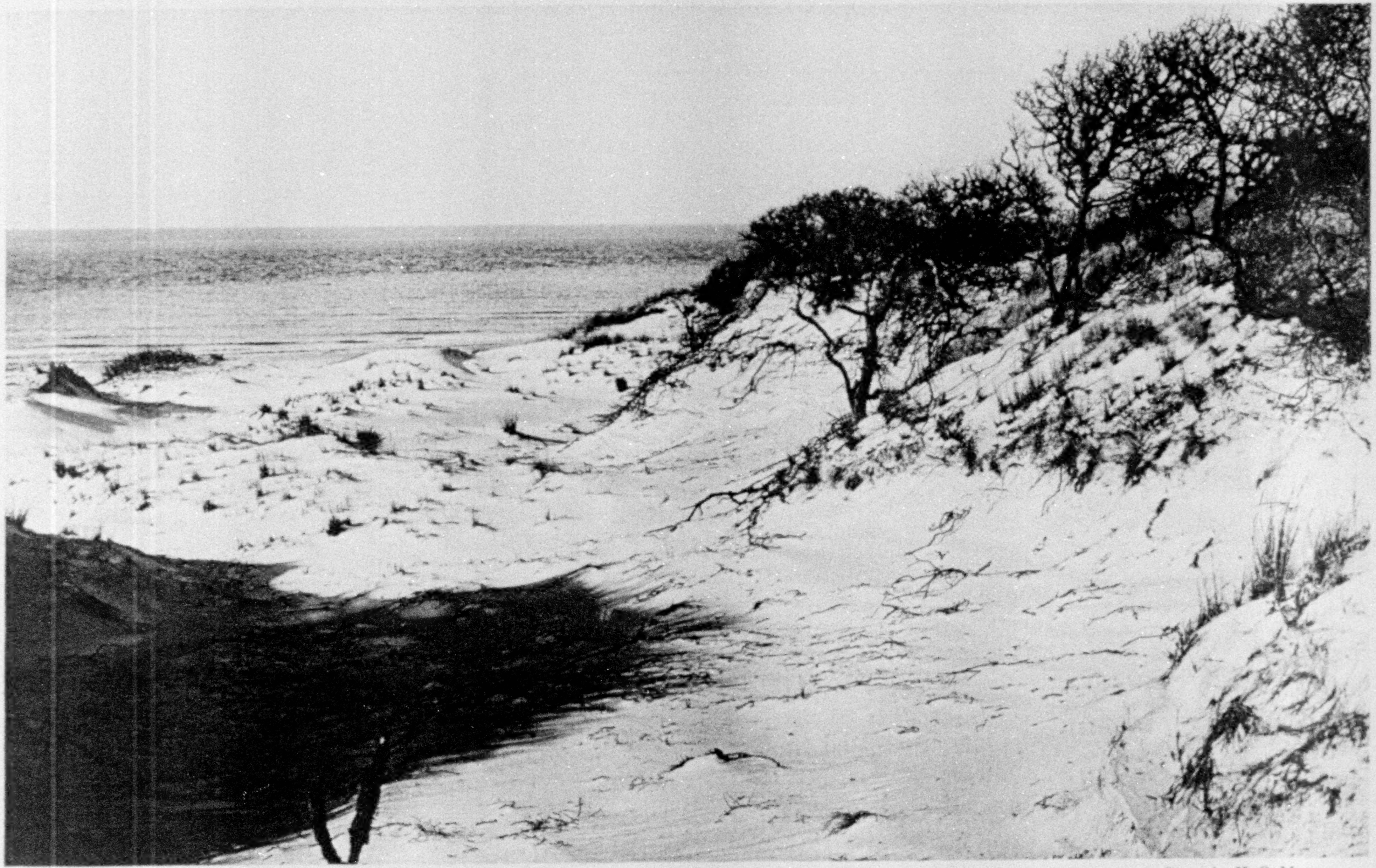

Photo by H. C. Mann

A DISPUTED TRENCH

To this point the invading ocean has carried its banner time and time again, but finds a stubborn resistance on the part of the land forces.

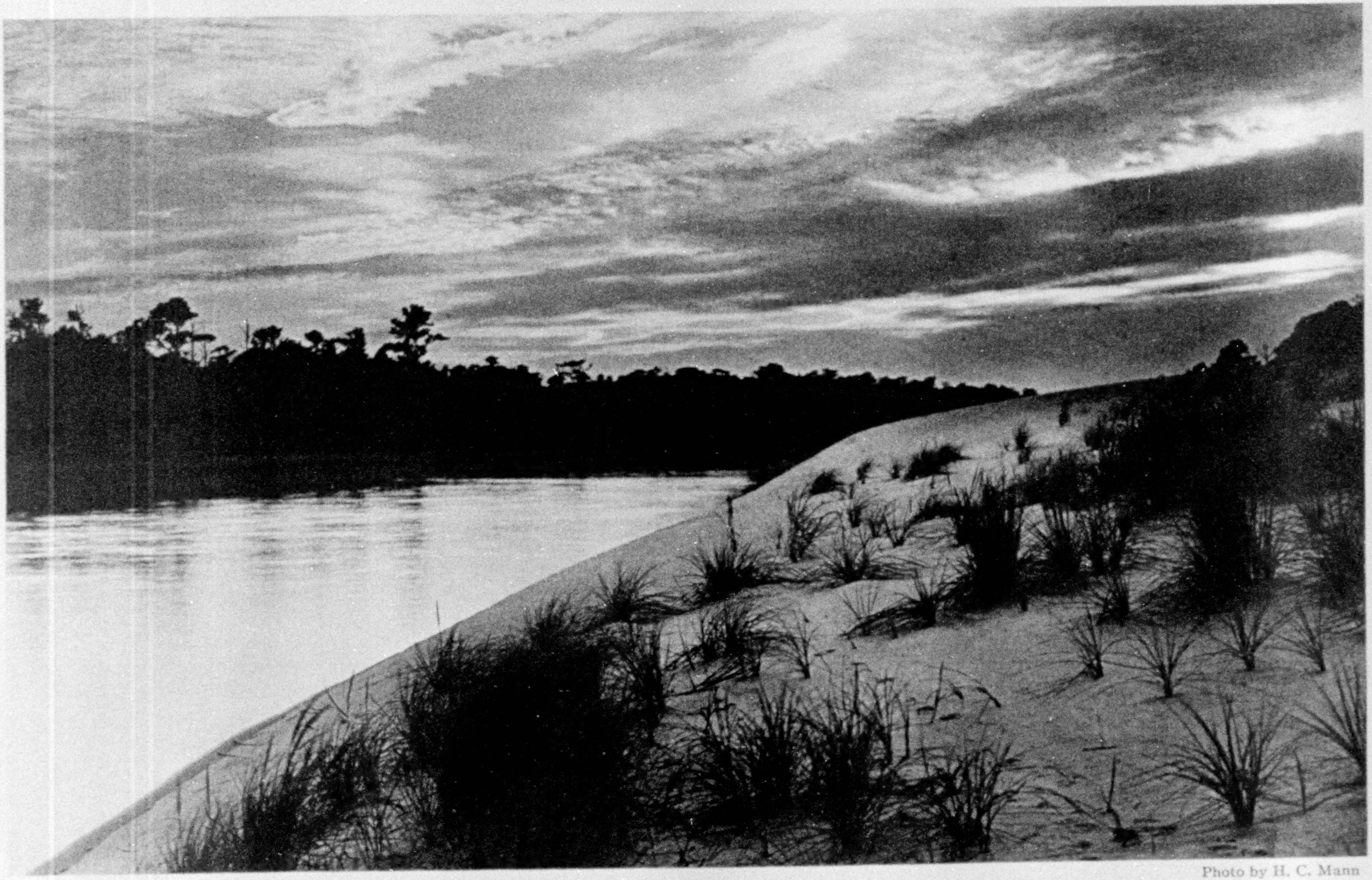

Photo by H. C. Mann

A SAND DUNE CROSSING A RIVER

The giant dune, stretching for several miles inland at Cape Henry, Virginia, is confronted by the problem of a small river on its way to the sea. Undaunted by this obstacle, the dune has filled in nearly half of the river bed and will eventually cross the stream, unless the hand of man interferes.

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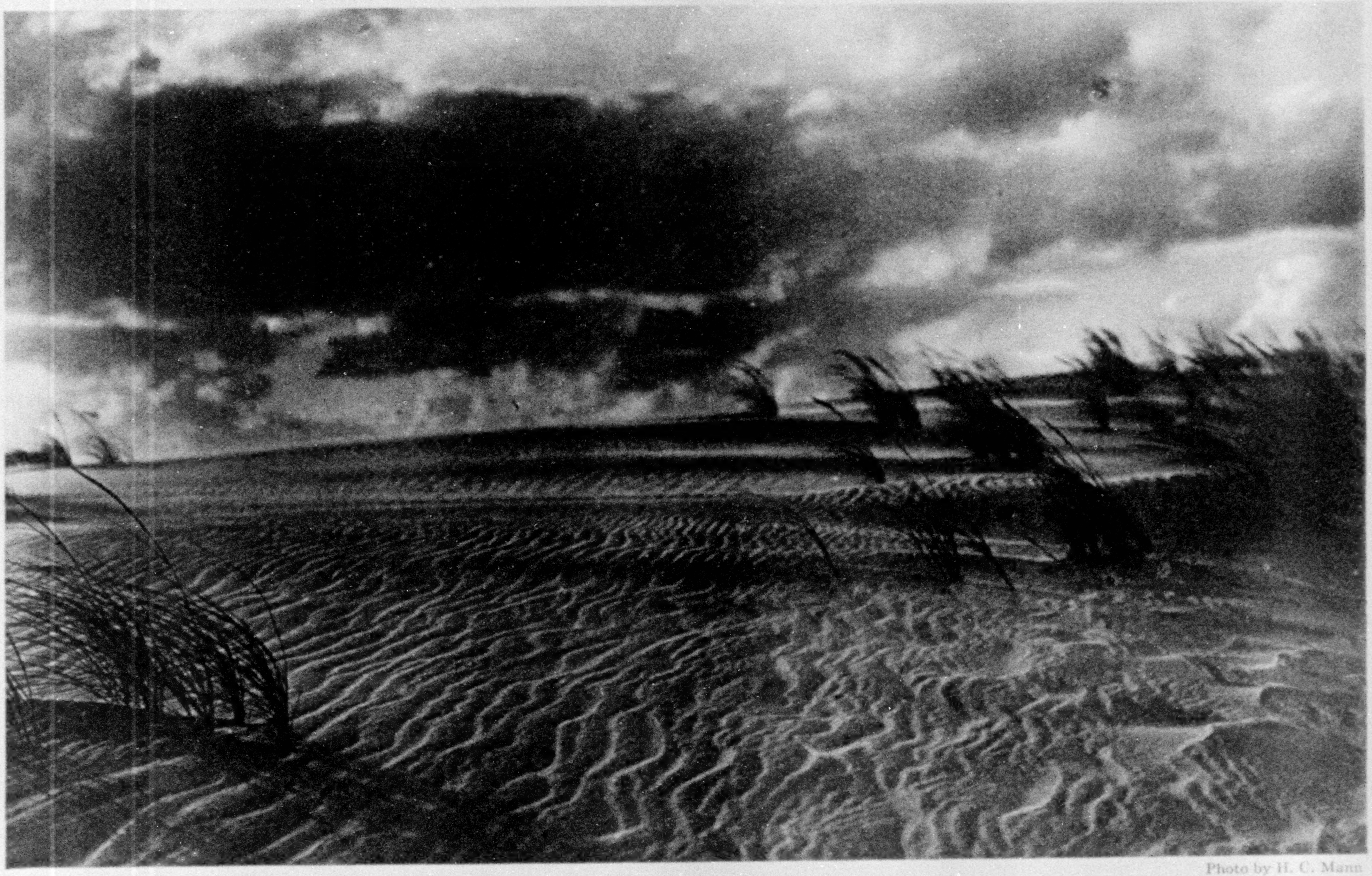


Photo by H. C. Mann

THE WIND AT WORK

The sand is cut into ripples as far as the eye can see and piles up around the friendly wire grass in an effort to anchor.

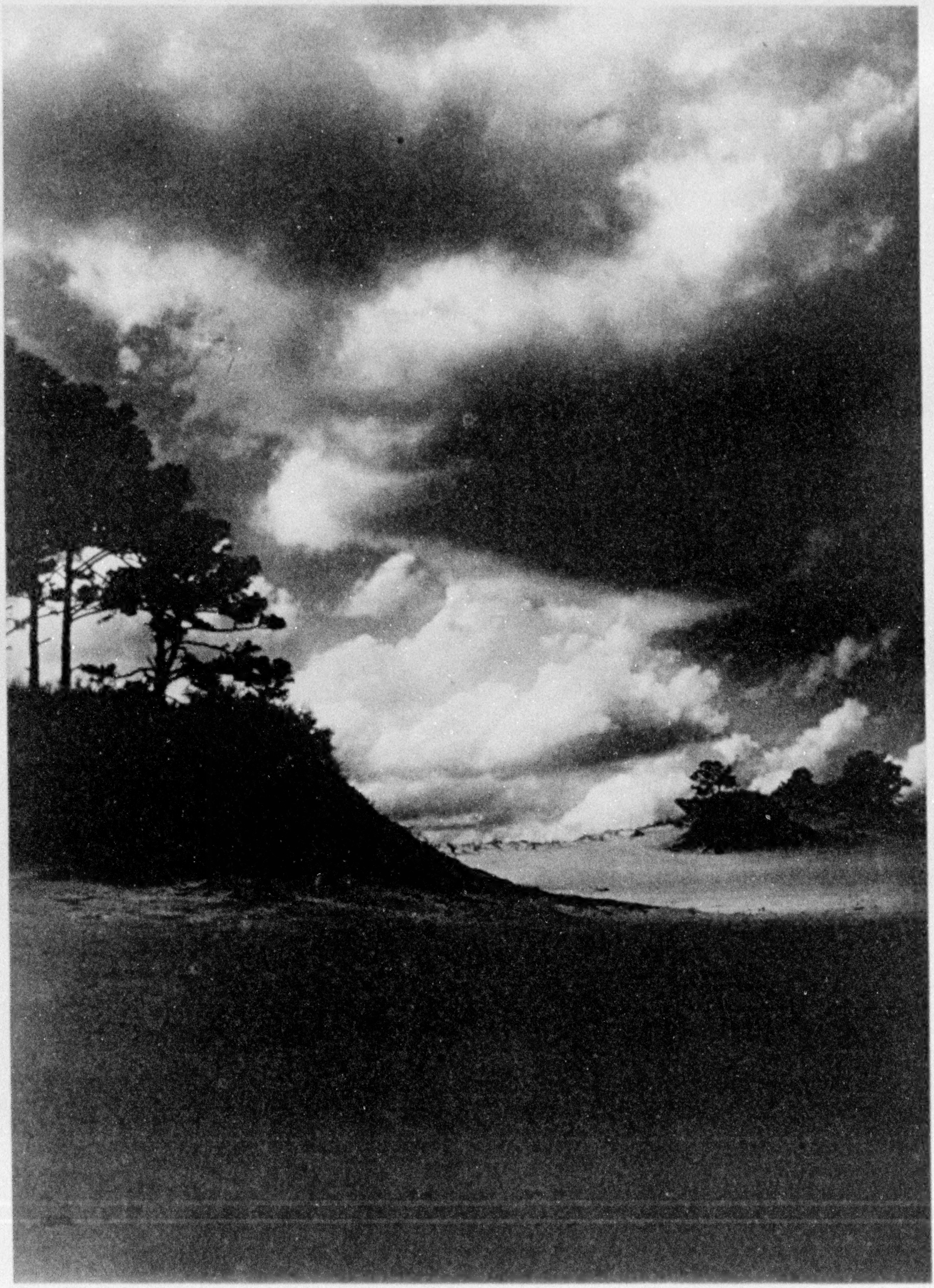


Photo by H. C. Mann

WAR'S LIGHTENING IN THE SKY

Storm cloud signals. The call to arms of the wind means that the land forces must look to their defenses.

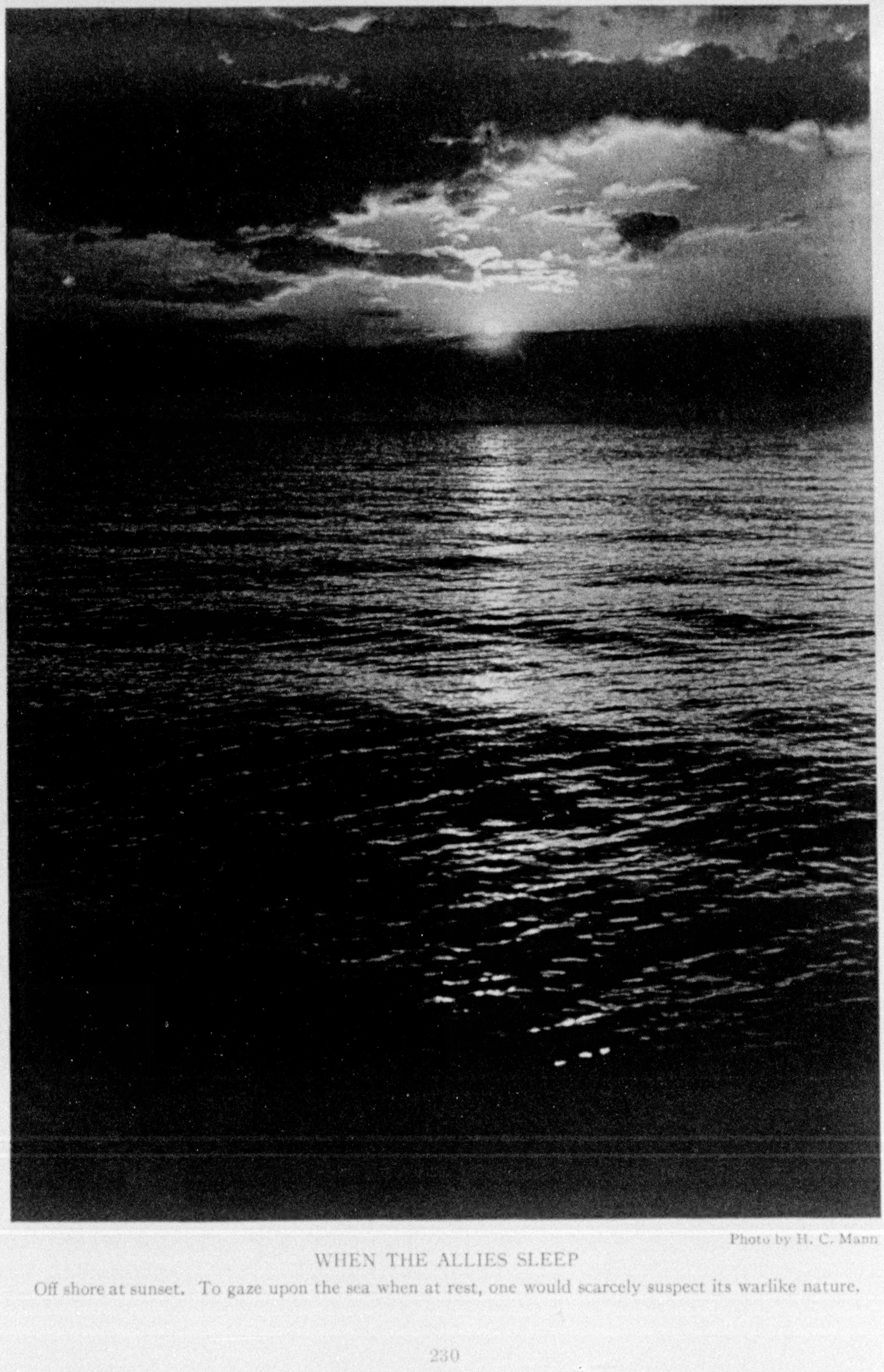


Photo by H. C. Mann

WHEN THE ALLIES SLEEP

Off shore at sunset. To gaze upon the sea when at rest, one would scarcely suspect its warlike nature.

# HISTORIC ISLANDS AND SHORES OF THE ÆGEAN SEA

### By Ernest Lloyd Harris

EVER since the days when Aristogoras of Miletus endeavored to arouse Athens and Sparta to join forces with the Ionian Union in order to resist what he conceived to be the inevitable onslaught of the hordes of Persia, history has been repeating itself on the islands and in the countries bordering the Ægean Sea.

Upon this dividing line between Orient and Occident a struggle for supremacy has been going on for 2,500 years. We find Persian pitted against Greek, Roman against Pontian, Byzantine against Moslem, Crusader against Saracen, and Turk against Mogul. The battles of the recent Balkan war upon the plains of Thrace and the trench warfare of the present war on the Gallipoli Peninsula have been as stupendous, as bitter, and as cruel as any that ever were waged since the days when the troops of Mardonius first crossed the Hellespont.

Not only has Asia Minor and the islands facing its shores been the stage upon which have been enacted some of the most gigantic events in human history, but it is at the present time one of the most interesting and picturesque regions in the world. It has often been termed the quintessence of the East. For nowhere else will you find, thrown together in close association, so many things of the East—the camel caravan; the groves of cypress, olive, plane, and valonia trees; the mosque and towering

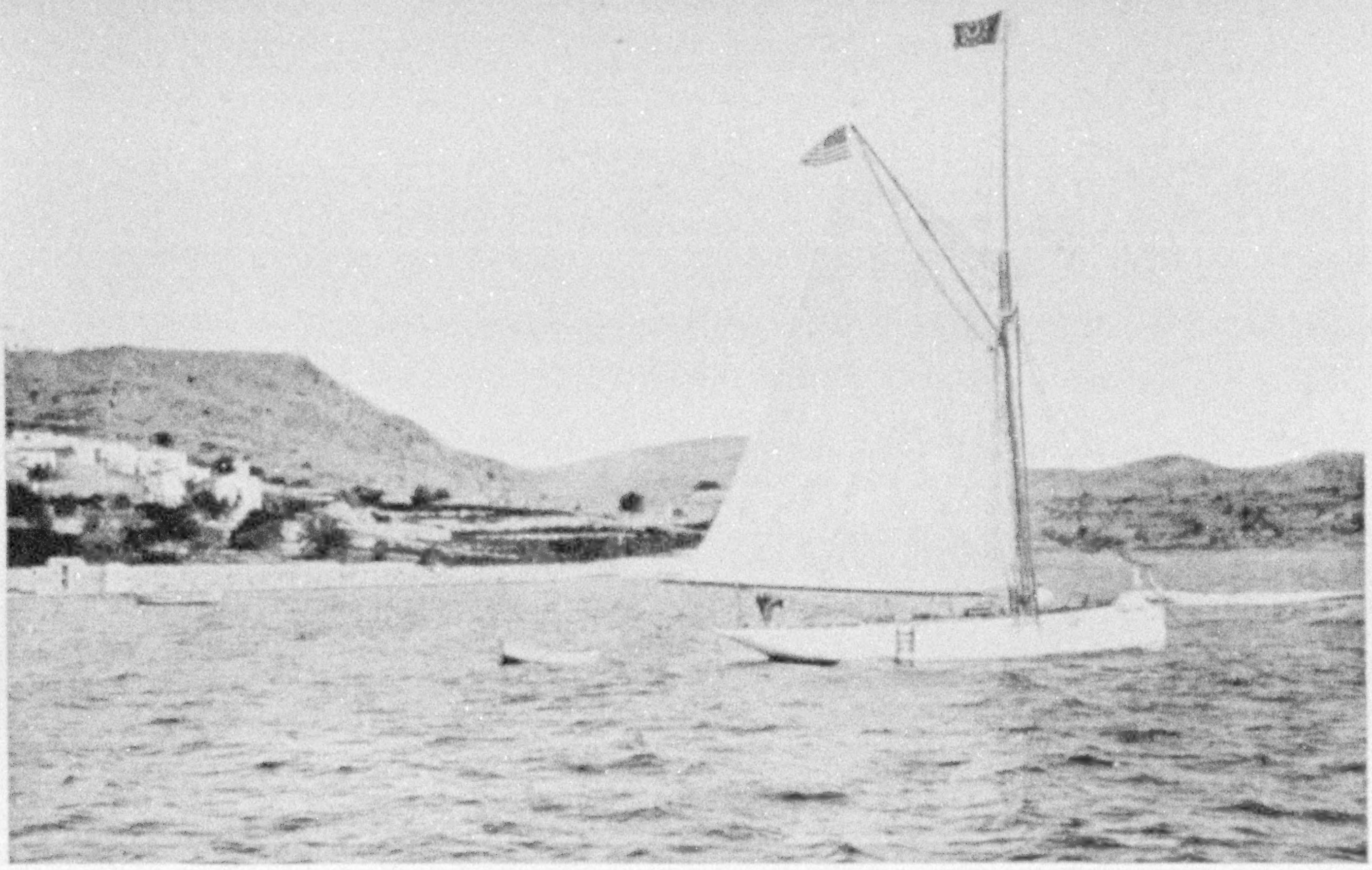
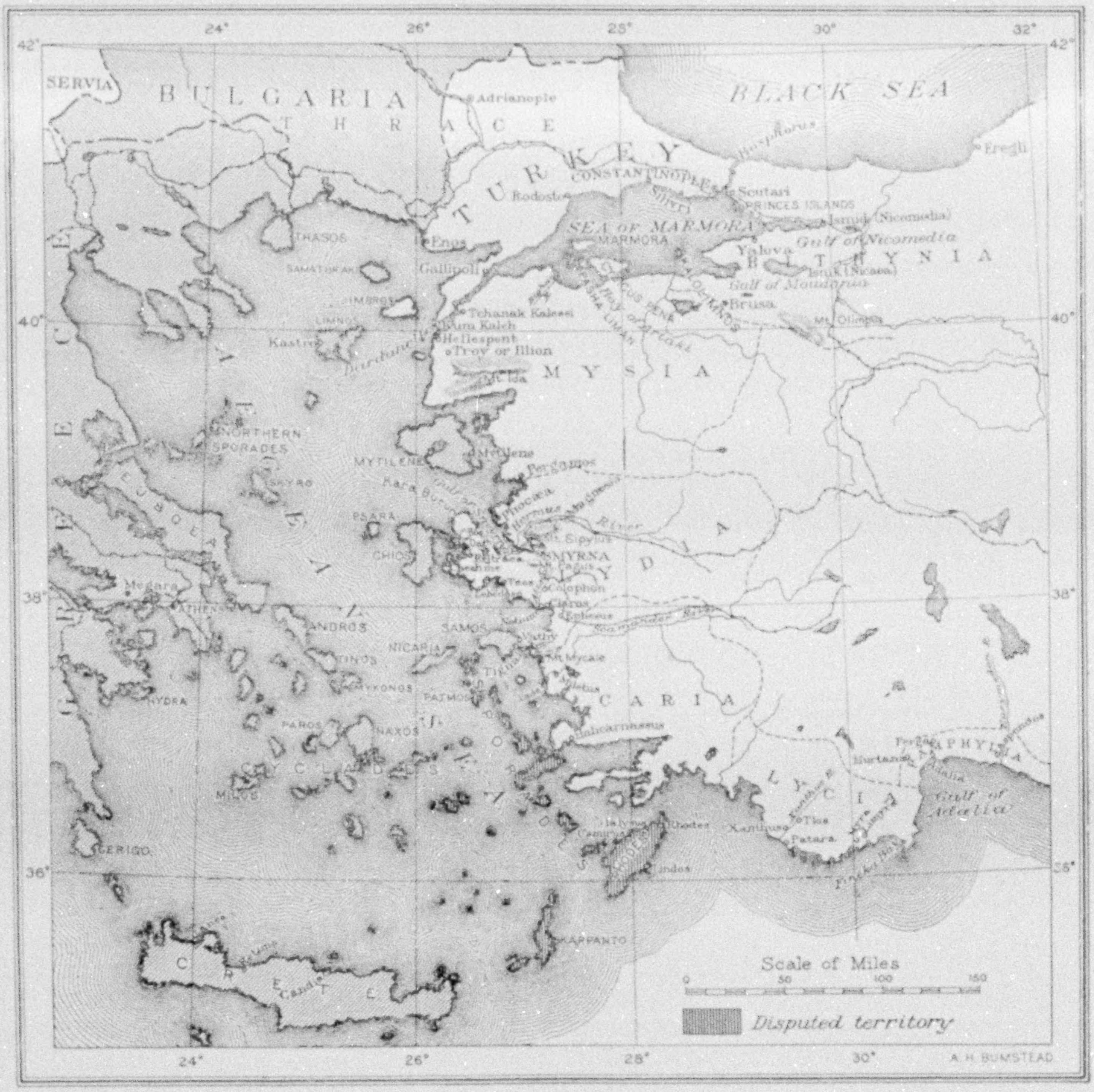


Photo by Ernest L. Harris

THE "VIOLET," UPON WHICH THE AUTHOR MADE HIS CRUISE AMONG THE ISLANDS OF THE ÆGEAN ARCHIPELAGO

The vessel was sufficiently large to carry three passengers, three seamen, and a cook


24°
26°
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36°
SERVIA
BULGARIA
THRACE
Adrianople
BLACK SEA
Bosphorus
Eregli
TURKEY
Rodosto
CONSTANTINOPLE
Scutari
PRINCES ISLANDS
Ismid (Nicomedia)
SEA OF MARMORA
MARMORA
Gulf of Nicomedia
Yalova
BITHYNIA
Isnik (Nicaea)
Gulf of Moudania
Brusa
Mt. Olimpo
THASOS
Enos
Gallipoli
SAMATHRAKI
IMBROS
LIMNOS
Kastro
Tchanak Kalessi
Kum Kaleh
Hellespont
Troy or Ilion
Dardanelles
MYSIA
NORTHERN SPORADES
MYTILENE
Mytilene
Pergamos
Kara Burun
SKYRO
EUBOEA
PSARA
Phocaea
Hermus
Mt. Sipylus
CHIOS
SMYRNA
LYDIA
Teos
Colophon
Megara
ATHENS
ANDROS
Ephesus
SAMOS
NICARIA
Mt. Mycale
TINOS
MYKONOS
PATMOS
Miletus
HYDRA
PAROS
NAXOS
CARIA
Halicarnassus
CYCLADES
MILOS
LYCIA
PHRYGIA
Murtana
Adalia
Gulf of Adalia
Tlos
Patara
Xanthus
Rhodes
RHODES
Lindos
CERIGO
KARPANTO
CRETE
Candia
Finike Bay
GREECE
AEGEAN SEA
DODECANESUS
Scale of Miles
0
50
100
150
Disputed territory
A. H. BUMSTEAD

MAP OF THE GATES TO THE BLACK SEA

minaret; latticed windows and veiled women; quaint and picturesque costumes, and a background made up of the remnants of an ancient civilization in the form of ruined cities which dot the surface of the whole country.

### A PLACE FOR THE ARCHEOLOGIST

And in this respect Asia Minor is being more appreciated from year to year. Thus far scholars have devoted their energies to the excavation and study of the ancient sites of Greece, and have neglected, to a certain extent, the broader field of research in Asia Minor. But this is gradually changing. The veil of darkness which has hung over the ruined Ionian cities for more than 2,000 years is slowly being lifted, revealing to view a throng of ancient sites which are replete with absorbing interest and full of mysterious charm.

I made the cruise among the islands of the Turkish archipelago in a cutter which was sufficiently large to carry three passengers, three seamen, and a cook. The little dining cabin was spacious enough to admit of six people being seated at table, a circumstance often appreciated when lying at anchor in some of the quiet little harbors of Samos and Chios. Thus, being my own master in every respect, I was at liberty to dispose of my time as I saw fit without being at the beck and

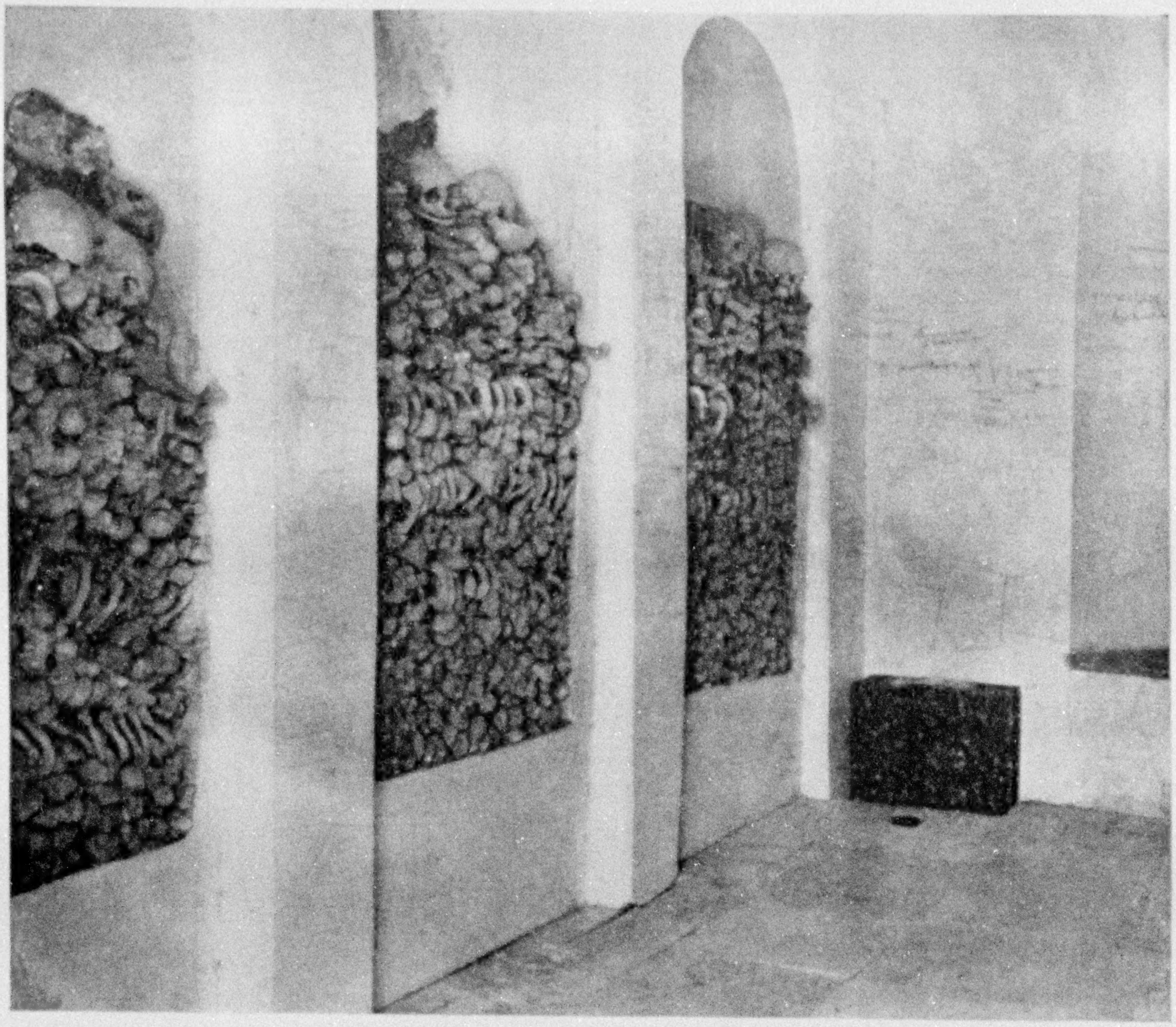

Photo by Ernest L. Harris

INTERIOR OF A MONASTERY ON THE ISLAND OF CHIOS, NOT FAR FROM THE LITTLE TOWN OF KASTRO

Its walls and alcoves are packed with the skeletons of the Chians who were massacred in this neighborhood by the Turks in 1822. It is claimed that the bones of five thousand people have been collected and thus placed on exhibition. The cellar of the monastery is also filled to overflowing (see text, page 238).

call of others. This fact enabled me to visit many places rarely sought out by the tourist and seldom even by the archæologist.

In sailing out of the harbor of Smyrna* the sites of the ancient cities of Clazomenæ and Phocæa may easily be visited. A few old walls of uncertain periods are all that is left to mark the place where these prosperous cities once stood. Many of the stones of the former have been removed to Smyrna and used as building material. Many peculiar sarcophagi were also unearthed here several years ago and sent to the new museum at Constantinople.

Clazomenæ was the birthplace of the philosopher Anaxagoras, and it is chiefly due to the fame of this great Ionian that the city has lived in history. While Anaxagoras left the place of his birth when still a young man, in order to link his fortunes with the intellectual age of Pericles at Athens, yet he remained the chief exponent of the Ionian school of philosophy.

The sister city of Phocæa, situated at the entrance of the harbor, not far from the mouth of the Hermus River, is known chiefly as the mother city of Marseilles. Following in the footsteps of

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* For a description of Smyrna see NATIONAL GEOGRAPHIC MAGAZINE, December number, 1908, Vol. XIX.

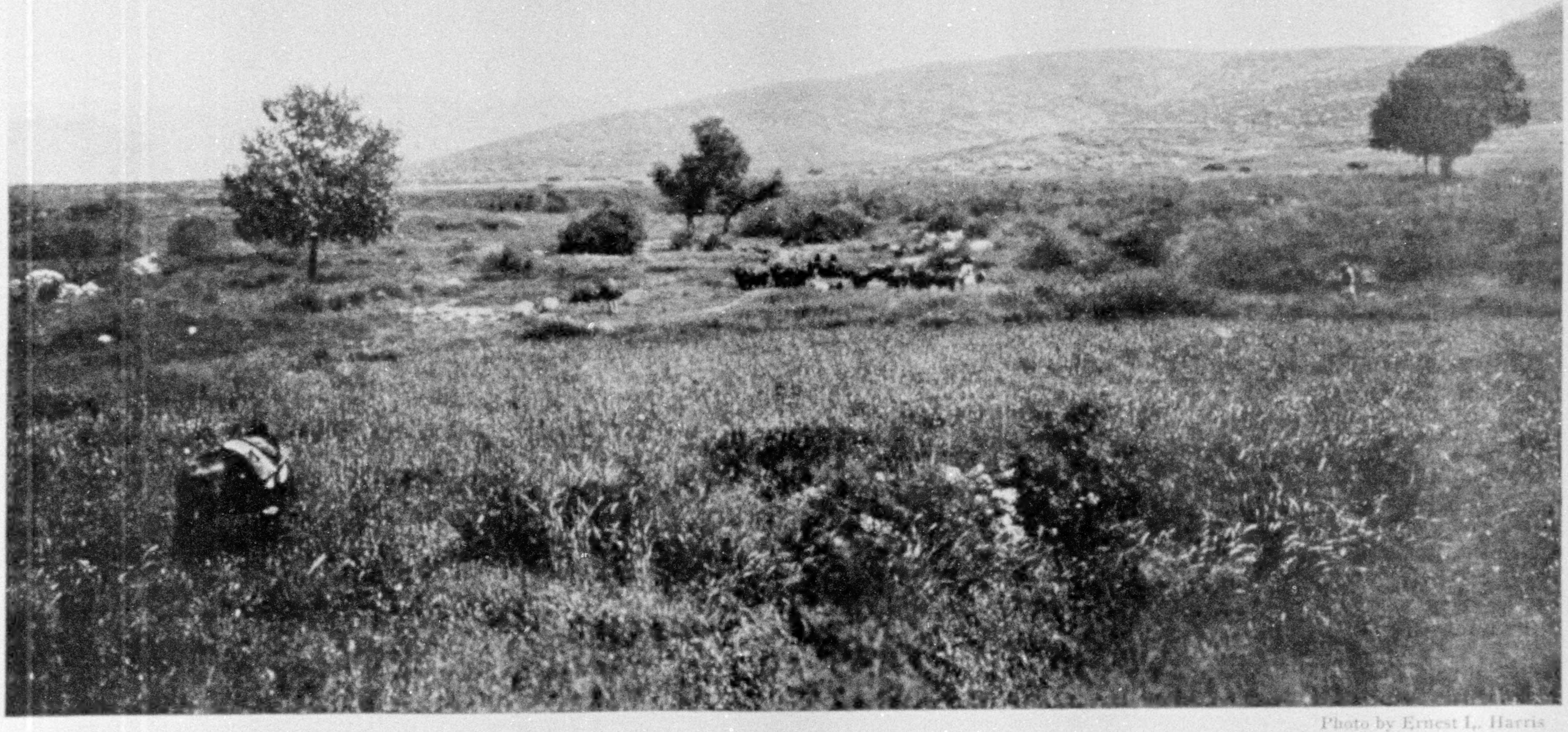

Photo by Ernest L. Harris

A CHARACTERISTIC LANDSCAPE ON THE ISLAND OF CHIOS

Chios has a population of approximately 70,000. It is celebrated for its beauty and fertility, although the landscapes in some places are barren and uninviting

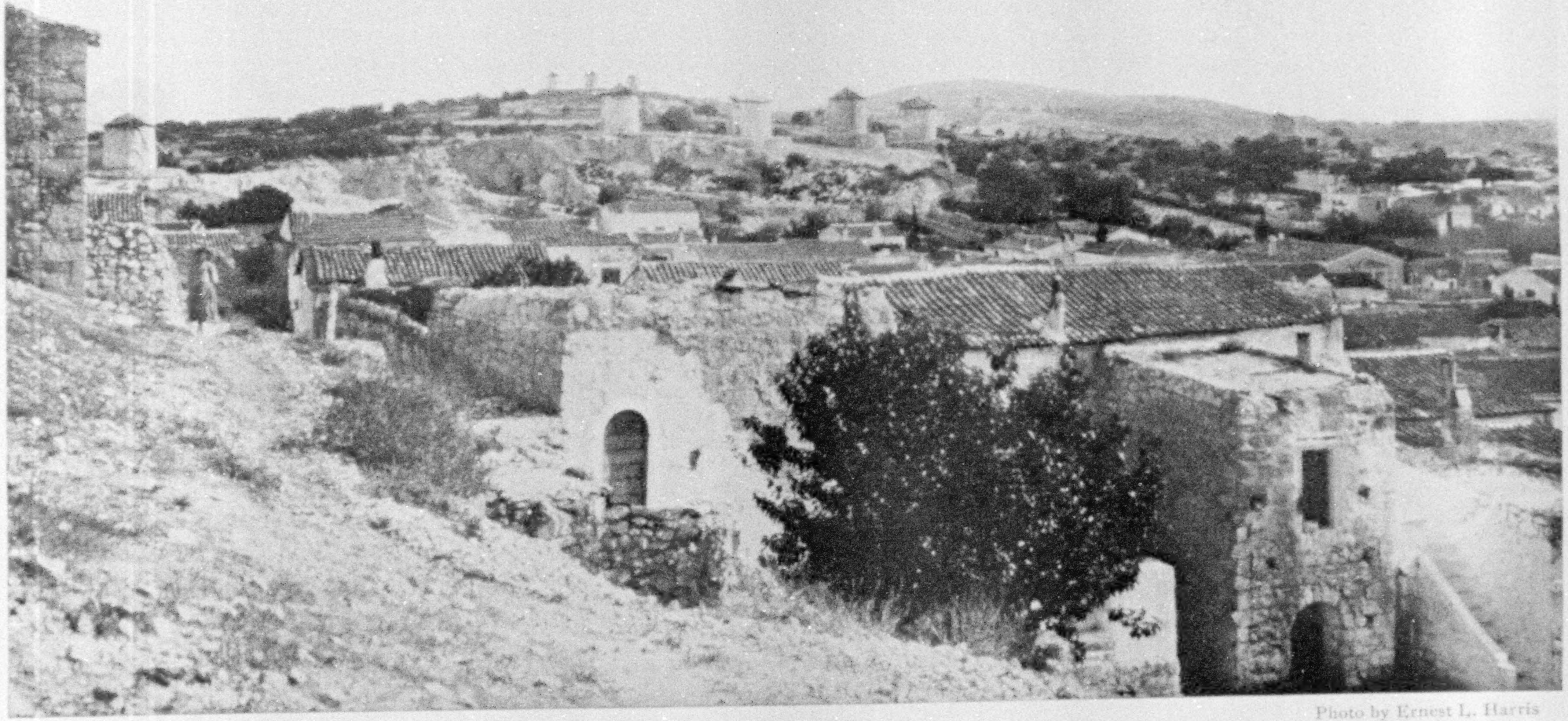

Photo by Ernest L. Harris

WINDMILLS ON THE ISLAND OF CHIOS

One feature of the scenery of Chios is the picturesque old windmills which crown the ridges and slopes along the coast. The wheels are of very large dimensions and fitted with sails, which supply the motive power for grinding corn. They are different in their construction from those of Holland.

Photo by Ernest L. Harris

A HIGHWAY SCENE ON THE ISLAND OF CHIOS

Earthquakes are not infrequent in Chios, and as insurance against damage by them houses are seldom built more than two stories high. When scattered along the country-side, where they are usually surrounded by olive or pepper trees, their peculiar architecture lends beauty and charm to the landscape (see text, page 238).

Phœnicia and Miletus, the Phocæans became great seafarers and colonizers. What the former did in Rhodes, Crete, and Carthage, and the latter along the shores of the Black Sea, this Greco-Ionian town duplicated in Corsica and on the coast of southern France.

From the headland of Kara Burun (see map, page 232) the view to the south is extensive. Outlined against the horizon may be seen the sharp peaks of Nicaria and Samos, while near at hand the green valleys of Chios lie spread out in pleasing contrast with the blue of sea and sky.

### A HEROIC ISLAND

Chios has long been a bone of contention between Turk and Greek, and during the earlier part of the nineteenth century was the scene of some of the bloodiest tragedies known to history.

As early as 700 B. C. it was one of the richest and most important members of the Ionian Union. It has disputed with Smyrna the honor of being the birthplace of Homer. When the Ionian cities rebelled against the Persian yoke, Chios manned and equipped 100 ships and sent them to the battle of Lade. This stands for something when we take into consideration the fact that at that time, namely, 494 B. C., the population of the island numbered only 30,000 freemen and 100,000 slaves.

Chios has been, in turn, Ionian, Persian, Athenian, Roman, Italian, Turkish; and finally, in 1913, after a separation of

Photo by Ernest L. Harris

STREET SCENE AT VATHY, ISLAND OF SAMOS, SHOWING THE PALACE OF THE PRINCE IN THE FOREGROUND

nearly 2,300 years, it was united once more to the parent country, Greece. As one well may imagine, a little island which has changed masters so many times necessarily must have suffered much from the strife which swept over it.

Twice has this island been visited by terrible earthquakes. The first was away back in the year 17 A. D., and it was only through the fostering care of the Emperor Tiberius that the people were able to make a fresh start. The second was in 1881, when the town of Kastro was practically laid waste. Mosques, churches, and dwelling-houses disappeared into the bowels of the earth, engulfing no less than 5,000 people. This earthquake visited the whole island, and many beautiful and historic monasteries, some of which contained priceless objects of art, valuable libraries, and monuments of antiquity, were completely lost.

But in spite of all these vicissitudes Chios has also seen many happy days. Even in the old days of the Ionian Union it was celebrated on account of its commerce and industries, especially for its native wine, and the manufacture of beds and sofas. Under Rome the island was ruled as an insular province, and enjoyed several hundred years of almost unbroken peace and prosperity. The people have always been sober and industrious, and not only have they grown opulent in the various fields of commerce, but many have also succeeded in literature and art as well.

Chios's real troubles virtually began in the Greek war of independence. Somewhat against the will of the people, the island became involved in this struggle and was visited by a massacre which appalled humanity. In 1822 the Captain Pasha appeared before Kastro with a powerful fleet and landed an army of Moslems, who slaughtered, in the space of two months, no less than 30,000 Chians. It is also estimated that 32,000 were sold into slavery.

The entire island was given over to pillage, and scarcely a village, church, or convent was spared the flames. While it is true that the Chians, to a certain extent, provoked this attack, inasmuch as they were the aggressors, it cannot be denied, on the other hand, that their punishment was dreadful in the extreme. And, as might be supposed, their disappointment at the result of the Treaty of Adrianople, in 1829, which failed to unite them with the mother country, was very keen indeed.

### "VICTORY FOR THE CROSS"

These acts of ferocity, however, did not remain unavenged. While the Moslems were ravaging Chios, the islanders of Psara and Hydra were planning an attempt on the Turkish fleet, which was lying in the outer harbor of Kastro, just off the Genoese citadel. The authors of this bold stroke were Constantine Canaris and George Pepines. They arranged two brigs as fire-ships and manned them with a chosen band of desperate men.

The lights hanging at the masts of the Turkish vessels were so dim that the Chians were enabled completely to surprise the unsuspecting crew at midnight. The brig commanded by Canaris immediately grappled with the Captain Pasha's flagship and set it on fire. Pepine was equally successful, and another battleship went up in flames. With shouts of "Victory to the Cross," the old-time war cry of Byzantium, the islanders escaped in a launch which they had in tow, without the loss of a single man. Practically the whole of the Captain Pasha's fleet was destroyed, and 2,300 lives were lost. Only a very few survived.

There is an old Greek monastery about an hour's drive to the south of Kastro, which stands as a gruesome monument of this period. Its walls and alcoves are packed with the skeletons of the Chians who were massacred in this neighborhood. It is claimed that the bones of 5,000 people have been collected and thus placed on exhibition. The cellar of the monastery also is filled to overflowing.

In view of such events, it is but natural that a deep feeling of hatred and fear should have possessed the hearts of the Chians and should have kept alive the desire to be joined to Greece, an ambition not realized until 1913.

One of the chief products of Chios is gum mastic, which is grown on the southern part of the island. It is used as a gum, and also distilled as a liquid, which is used throughout the Levant as an appetizer immediately before meals. When mixed with water this liquid assumes a pale milky color, and is an intoxicant if used in immoderate quantities.

Speaking of mastic reminds me of an incident which happened to the late Mr. Price Collier and me when we were being escorted through a big spirit factory in Stockholm. While various things were being explained the manager placed before us something which seemed strangely familiar to me, and great was my surprise when I learned that mastic not only was fabricated in Stockholm, but was also shipped in large quantities to the Levant in competition with the natural product of Chios.

Many pleasant drives may be taken from Kastro, along the coast and into the interior of the island. There are numerous olive groves, although not nearly so many as on the sister island of Mytilene.[*] The roads are not good, and the means of conveyance are rather uncomfortable, especially if carriages are used. In this respect Chios could emulate the splendid roads on the island of Mitylene, which are considered to be the best anywhere in the Levant.

### A LAND OF WINDMILLS

One feature of the scenery of Chios is the picturesque old windmills which crown the ridges and slopes along the coast. The wheels are of very large dimensions and are fitted with sails, which supply the motive power for grinding corn. The landscape in many places is barren, especially the hilltops, but the valleys are usually fertile.

Owing to the possible visitation of earthquakes, the houses are rarely more than two stories high, and when scattered along the country-side are usually surrounded by olive or pepper trees, which add much to the beauty and charm of the country.

From Chios I sailed to the interesting harbor of Teos, on the mainland. A naval engagement once took place here between the fleets of Antiochus the Great

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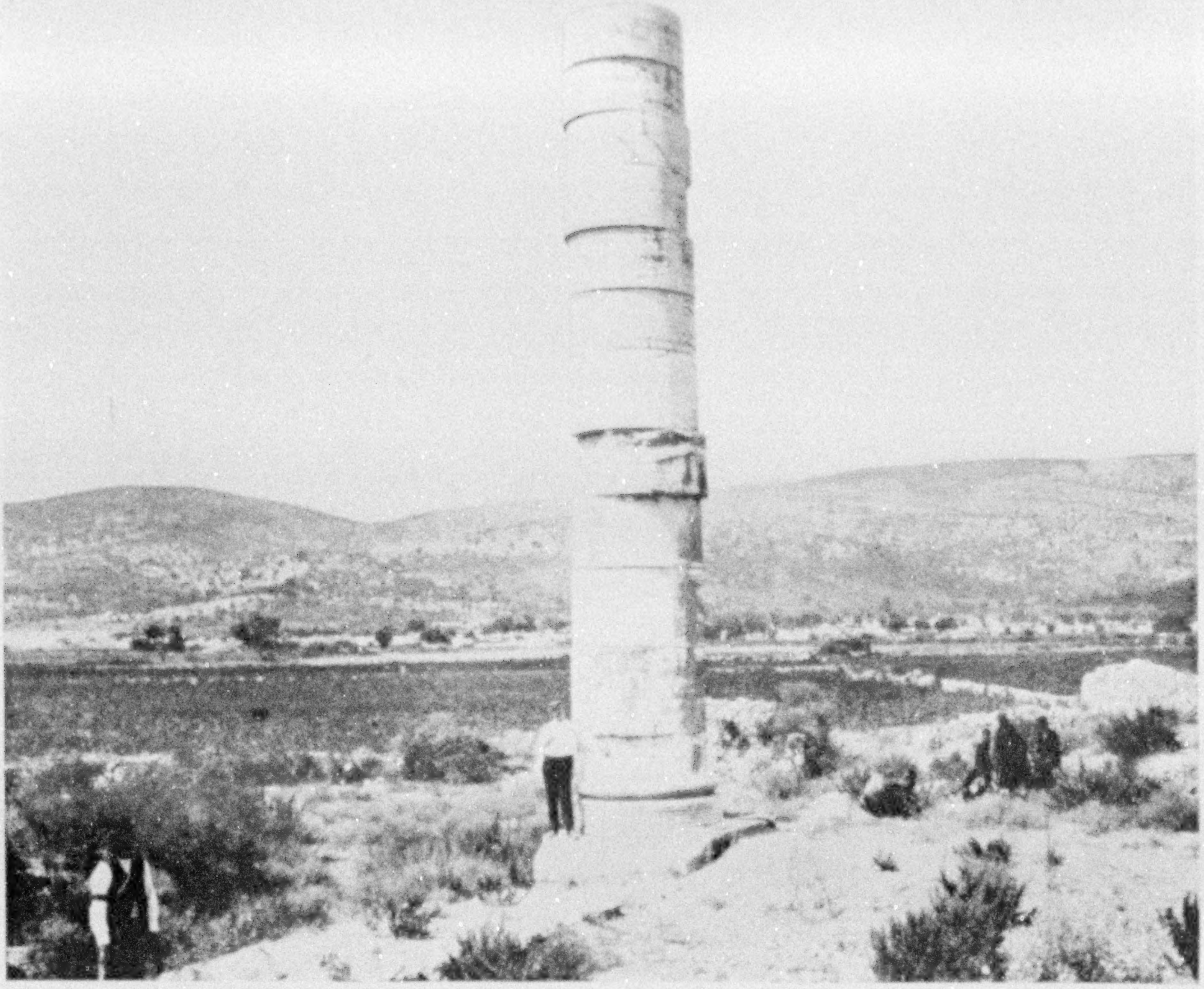
[*] For a description of the island of Mytilene see NATIONAL GEOGRAPHIC MAGAZINE, December number, 1908, Vol. XIX.



THE LAST STANDING COLUMN OF THE GREAT TEMPLE OF HERA: ISLAND OF SAMOS

"Herodotus declared that the Temple of Hera was the largest seen by him in all his travels. All that remains of this great temple today is one solitary column, with a number of drums missing at the top and heaps of ruins scattered about, partly hidden by high weeds. The whole scene is one of desolation" (see text, page 245).

and the Romans, which resulted in the destruction of the former.

Today this ancient town is ruined and deserted, and a few shepherds living nearby form the only signs of life in the neighborhood. Teos was once an opulent city of the Ionian Union, with stately edifices and all the refinements which accompany luxury and wealth. This is amply borne out by the ravished sepulchers, prostrate pillars, and inscriptions still extant. It was inclosed within a wall which must have been about four miles in circumference.

The chief ruins consist of the walls, the temple of Bacchus, and a theater. The temple at one time was one of the most celebrated structures in Ionia. The theater was a spacious one, but only the vaults which supported the seats now remain to give some idea of its former capacity. The galleries have long since disappeared or become covered with a thick layer of earth.

In the immediate neighborhood of Teos there are many tumuli, and situated near some hot springs are the ruins of a Roman bath. Teos would probably afford a good field for excavation, as little has been done in this respect, for a venerable olive grove now covers the major part of the ancient site.

Not far from Teos is the Turkish town of Sivrihissar, which is partly built from the sculptured marbles of the ancient city. Many inscriptions are seen in the sides of the houses and in the walls which partition off the gardens and lanes.

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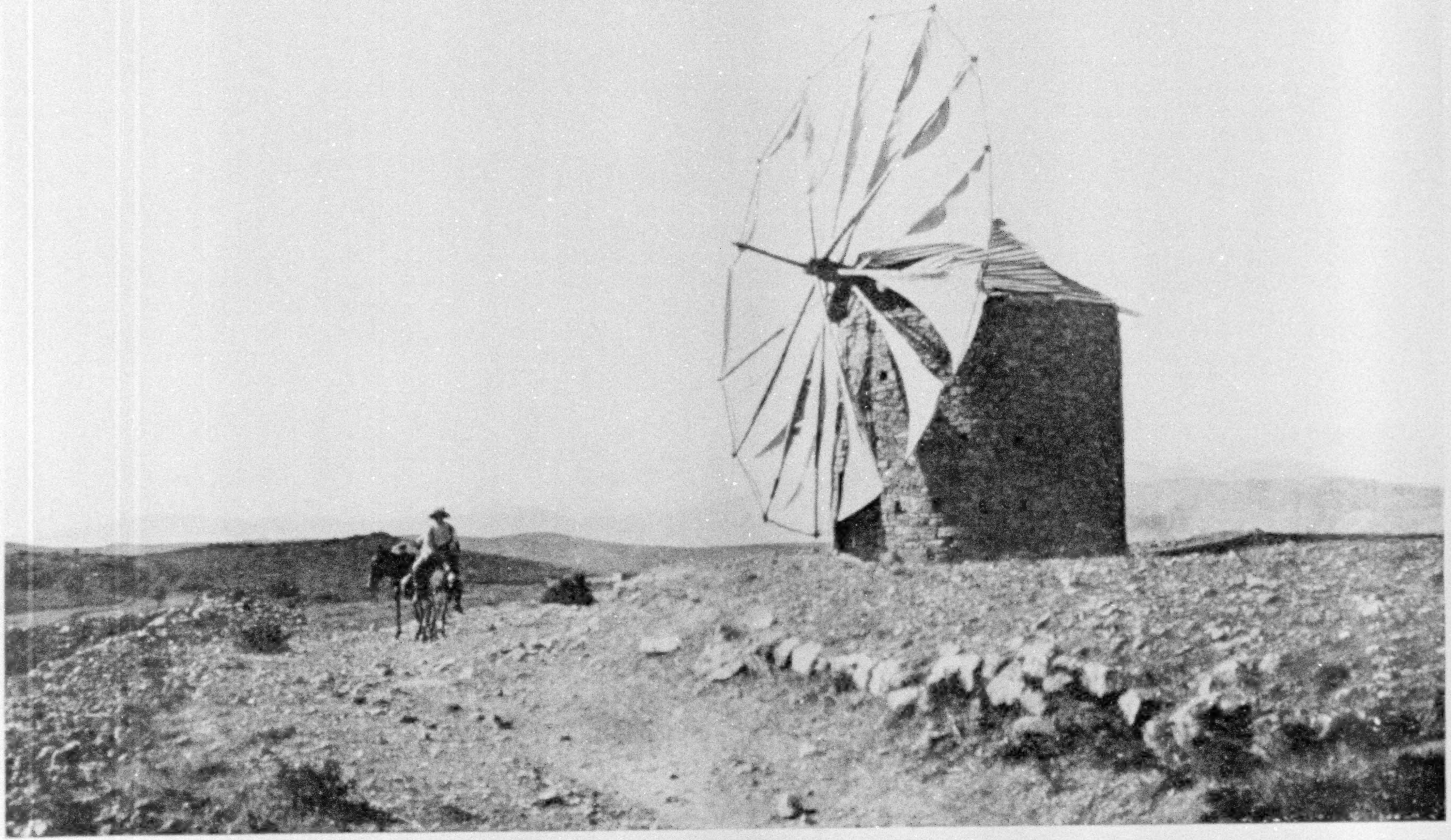

Photo by Ernest L. Harris

A TYPICAL LANDSCAPE ON THE ISLAND OF SAMOS

"It is difficult to realize that among these barren and denuded hills, which skirt the coast of both mainland and islands, there once throbbed the pulse of Ionian civilization; that these shores were graced with picturesque and happy cities, where hardy men and beautiful women lived content among unsurpassed natural environments and all the accomplishments known to any race" (see text, page 242).

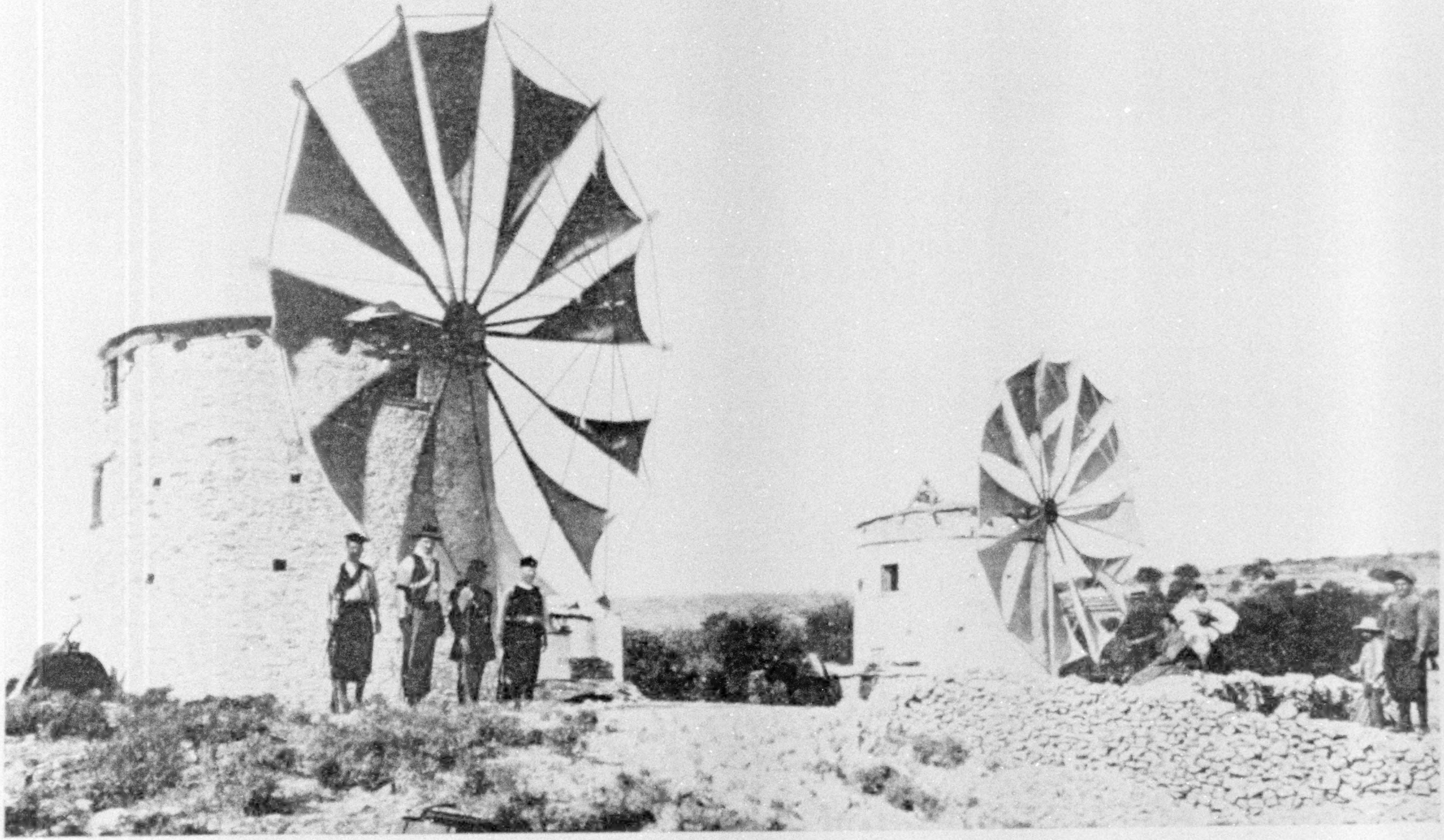

Photo by Ernest L. Harris

WINDMILLS ON THE ISLAND OF SAMOS

The Ægean Islands helped to form the base upon which has been erected the edifice of modern statecraft, philosophy, science, and art; this atmosphere once was pervaded with poetic refinement and literary perfection that has called forth the greatest powers of emulation on the part of every nation which has since existed; and a school of architecture flourished here which reared gigantic structures at once the wonder and admiration of the ancient world (see text, page 243).

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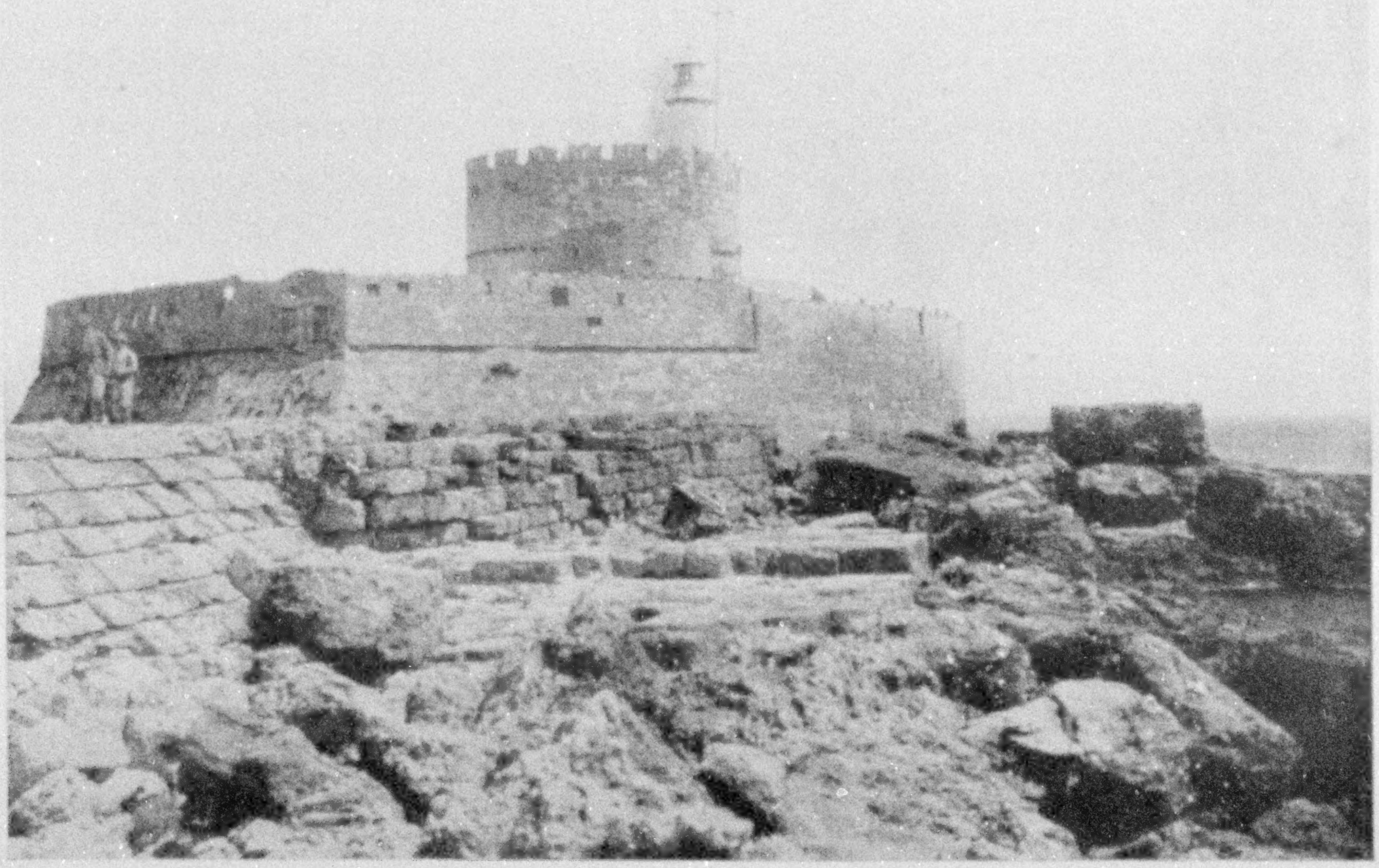

Photo by Theodore Leslie Shear

THE TOWER OF ST. NICHOLAS, AT RHODES, GUARDING THE ENTRANCE TO THE INNER HARBOR

This fort was built by the Knights of Rhodes in 1464, and, though frequently made the principal object of attack, it was never captured. One attack was frustrated by the bravery of an English sailor named Rodgers, who, observing that a bridge of boats was about to be thrown across from the opposite mole by a cable attached to an anchor fixed under the tower, dived into the sea, cut the rope, and saved the fortress.

A custom seems to prevail among the inhabitants of Asia Minor to use the tombstones from dilapidated Turkish cemeteries for the purpose of building walls along the roadside. It creates a kind of queer impression when riding along some of these lanes to be suddenly confronted by a number of slabs which bear inscriptions that probably read something like this: "Sacred to the memory of John Jones." When such a Turkish village is located in the vicinity of some ancient necropolis, it may be depended upon that there is a plentiful intermingling of Turkish and Greek epitaphs. While the Moslem population apparently cling with tenacity to the idea of the perpetuation of their burial places, there seems to be no particular reverence attached to the tombs themselves.

## IONIAN CIVILIZATION'S PULSE

While rocking in a ship upon the swell between the mainland of Asia Minor and Samos, with the broad harbor of ancient Ephesus only a few miles away to the left, the influence of the past steals slowly over one, and soon there comes the mood for profound reflection.

It is difficult to realize that among these barren and denuded hills, which skirt the coast of both mainland and islands, there once throbbed the pulse of Ionian civilization; that these shores were graced with picturesque and happy cities, where hardy men and beautiful women lived content among unsurpassed natural environments and all the accomplishments known to any race; that this soil, these seas, were the recipients of the seed which developed into the base upon

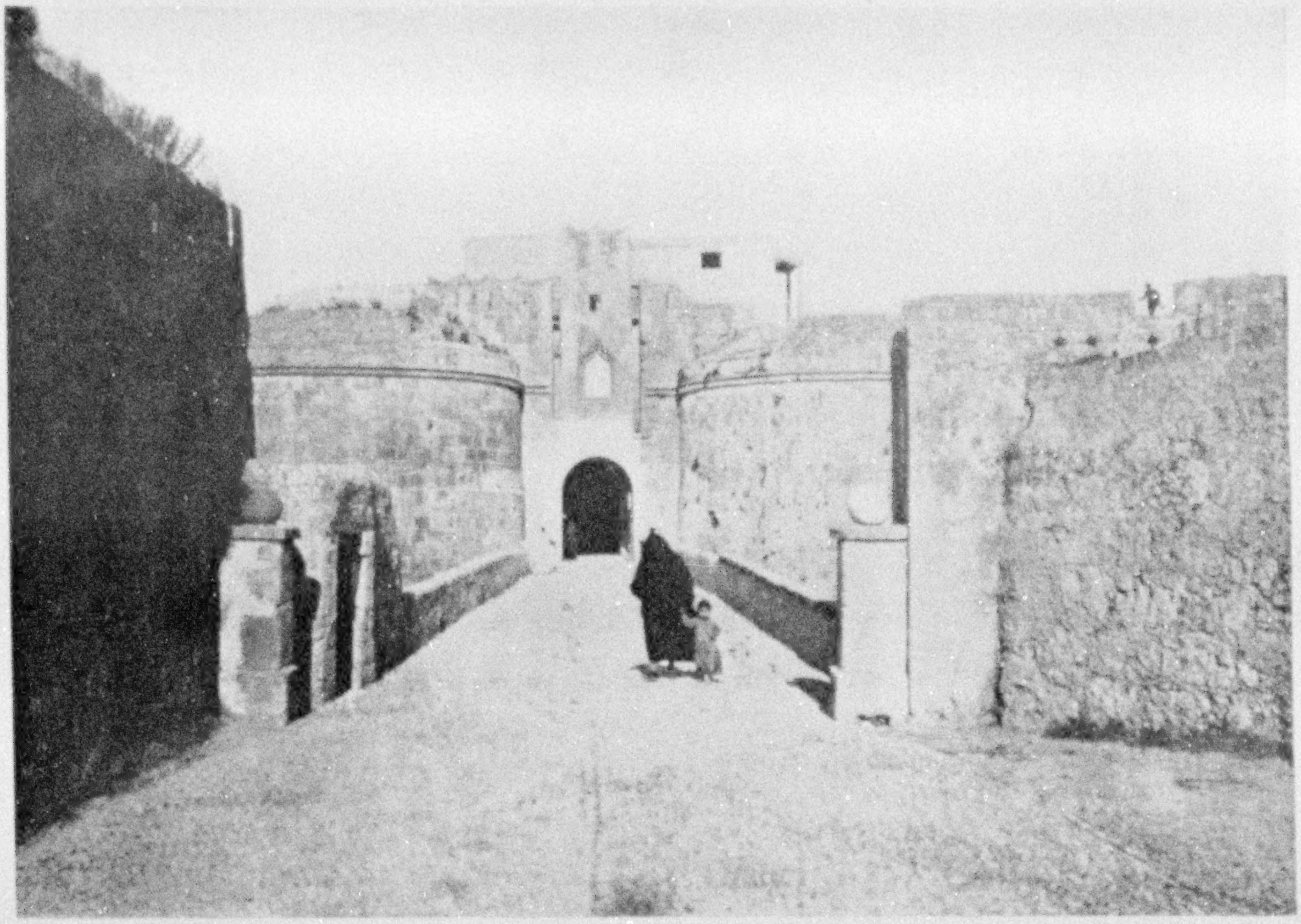

Photo by Ernest L. Harris

AN ENTRANCE TO THE FORTRESS AT RHODES: ISLAND OF RHODES

With the arrival of the Knights of St. John, an interesting period began for Rhodes. This order was founded in Jerusalem in the eleventh century, and after many hardships finally found a home at Rhodes, where it assumed the name of the Knights of Rhodes. The power of the order was also gradually extended over a number of small neighboring islands, as well as the coast of the mainland (see text, page 259).

which has been erected the edifice of modern statecraft, philosophy, science, and art; that this atmosphere once was pervaded with poetic refinement and literary perfection that has called forth the greatest powers of emulation on the part of every nation which has since existed; and that a school of architecture flourished here which reared gigantic structures at once the wonder and admiration of the ancient world.

The island of Samos formed one of the oldest settlements of the Ionians in the Mediterranean, and from this point most of the colonies on the coast of Asia Minor and other parts of the Ægean Sea were established. During the second half of the sixth century B. C. the wisdom and skill of Polycrates won for Samos the first place in the Ionian Union.

As Tyrant this statesman and politician carried on successful wars with the neighboring islands, and he even formed an alliance with Amasis, king of Egypt. Polycrates caused great edifices to be erected, and, on the whole, did much to encourage the fine arts. In the year 522 B. C. he was decoyed to Magnesia* and doomed to a miserable death on the cross by the Persian satrap of that place.

With the death of this great man the prestige of Samos began to wane, and it gradually sank into insignificance. The island was also the birthplace of the great philosopher Pythagoras.

Samos came under the yoke, in turn, of the Athenian Greeks, Romans, Byzantines, Arabians, Venetians, Genoese, and finally the Turks. In the Greek war of independence Samos fought for Greece and successfully resisted every effort on

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*For a description of Magnesia see NATIONAL GEOGRAPHIC MAGAZINE, December number, 1908, Vol. XIX.

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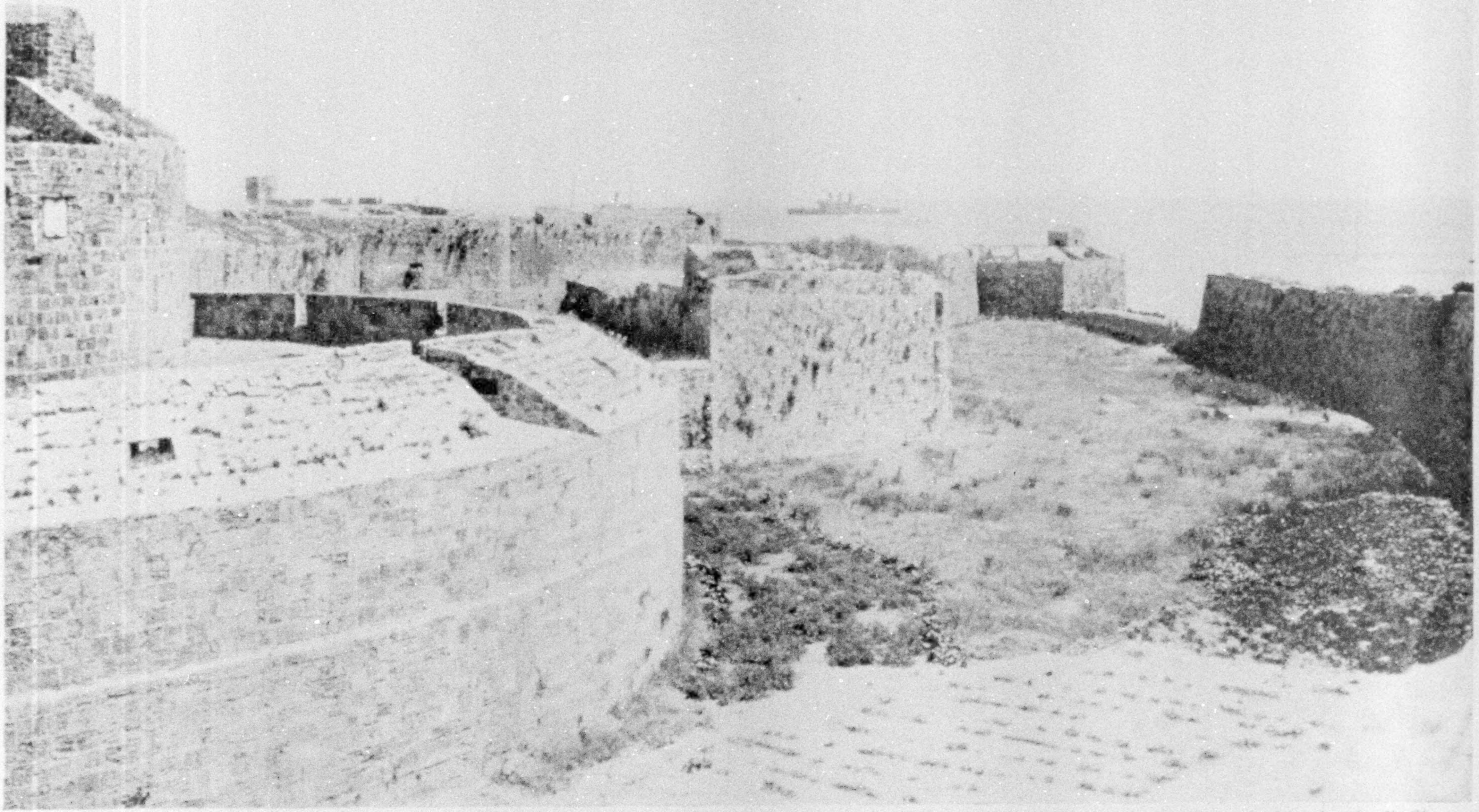


Photo by Theodore Leslie Shear

THE WALLS RUNNING SOUTHEAST FROM THE TOWER OF ITALY TO THE SEA: RHODES

In 1522 Suleiman, with a mighty fleet of more than 400 ships and upward of 140,000 men, attacked the city of Rhodes with its garrison of 600 Knights and 6,000 soldiers. So valiantly did the latter defend the place, that the conqueror allowed the Knights to leave with all their ships and goods and guaranteed to those who elected to stay safety in person and property, free exercise of religion, and freedom from taxation for a period of five years. These engagements were strictly fulfilled, even down to May, 1912, although they gave the inhabitants of the islands certain rights and privileges not accorded to any other Ottoman subjects.

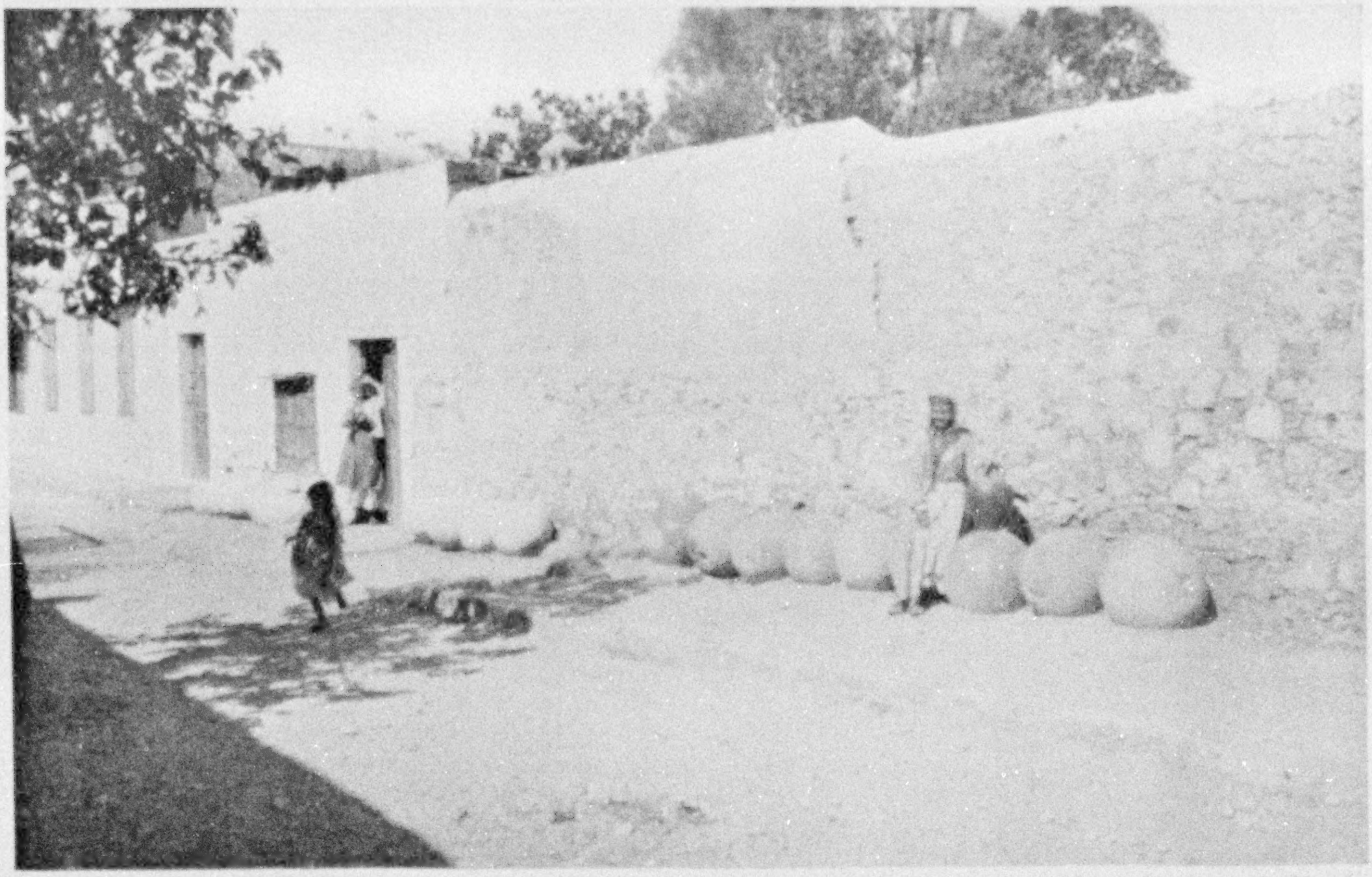


Photo by Ernest L. Harris

SCENE IN THE FORTRESS AT RHODES, SHOWING CANNON BALLS OF MEDIEVAL TIMES

the part of the Turks to maintain themselves on the island.

After a three days' visit at Vathy, I sailed the *Violet* around the island through the Strait of Mycale to the ancient town of Tigani. From this point I secured horses and returned through the center of the island to Vathy, sending the cutter back by the same way it came, to await my arrival.

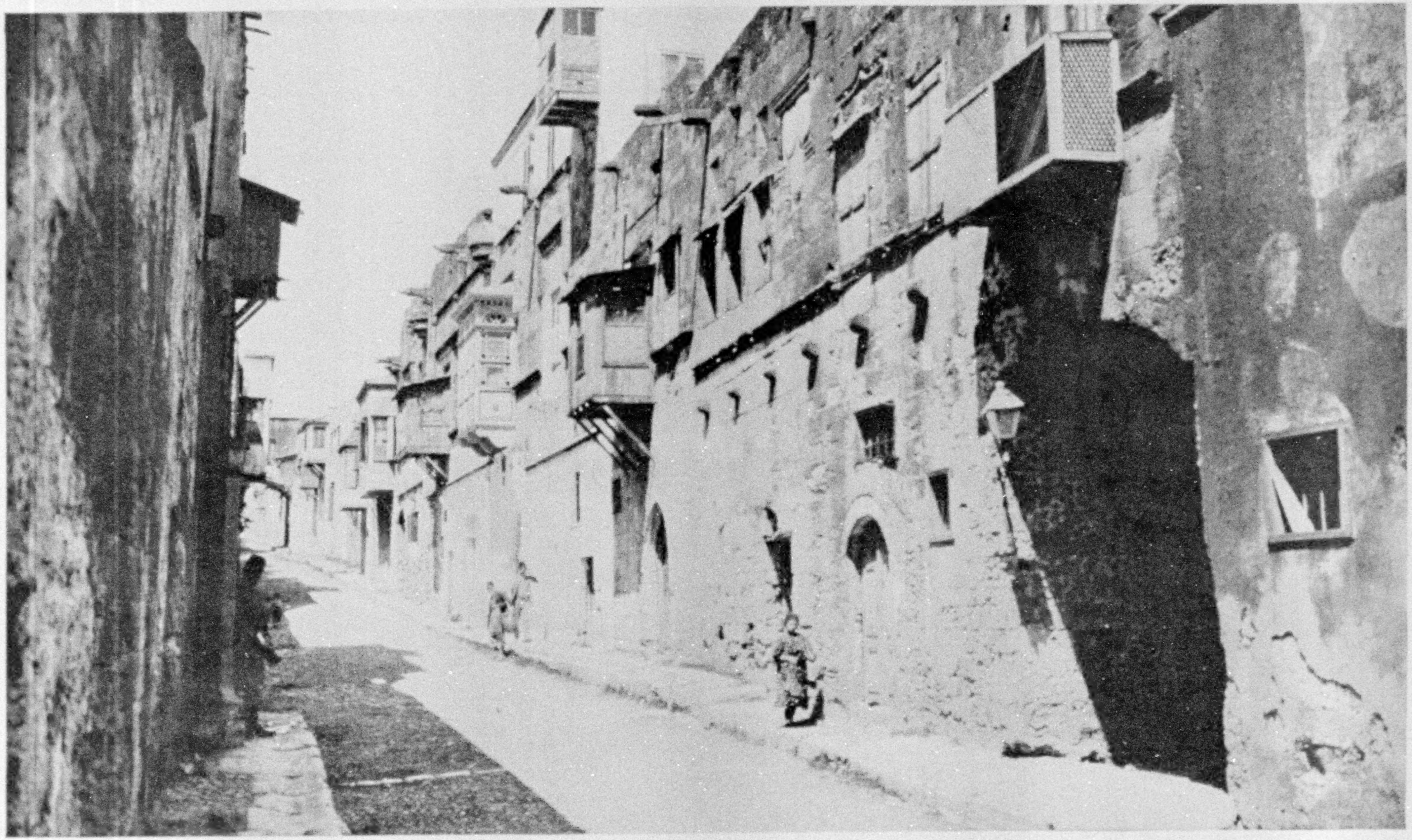
The little town of Tigani is situated by the harbor of ancient Samos, and the immense moles once erected by Polycrates have, for the most part, been reconstructed. The walls, scattered fragments of a theater, and the celebrated underground aqueduct are the only remains of the ancient town, and they date from the time of the famous Tyrant. The walls which pass over the lofty ridge behind the harbor in the distance resemble the great wall of China. They are well preserved, and there are no less than 30 towers still standing.

Herodotus dwells at length upon the harbor, the conduit under the mountain, and the Temple of Hera. The aqueduct is a marvel of engineering skill, considering the time and age in which it was constructed. The end of the tunnel is situated about half way up the hill above the town, and with a guide and candles I was able to penetrate some distance into the channel. Such a visit is attended with some risk, because the flickering tapers are but an insufficient light in assisting one to pick a precarious way along the edge of a deep and narrow cutting.

### THE GREAT TEMPLE OF HERA

The Temple of Hera was the finest monument ever erected on the island of Samos, and Herodotus says that it was the largest known to him in all his travels. All that remains of this great temple today is one solitary column, with a number of drums missing at the top, and heaps of ruins scattered about, partly hidden by high weeds. The whole scene is that of desolation, and one of the greatest shrines the world ever saw has been as irretrievably doomed to absolute destruction as have the sister temples at Ephesus and Magnesia (see page 9).

After a visit to the walls above the city, I descended into the adjoining valley and visited the springs which furnished the



THE STREET OF THE KNIGHTS IN THE CITY OF RHODES

Photo by Theodore Leslie Shear

In the days of the Knights the garrison of Rhodes was subdivided into companies according to language—companies of France, Provence, Auvergne, Castille, Aragon, England, Germany, and Italy—each responsible for the defense of a stated section of the wall. The best preserved of these houses is the Auberge de France, which retains still its medieval decorations, escutcheons, and grinning gargoyles. This house has been purchased by the French government to be maintained as a museum.

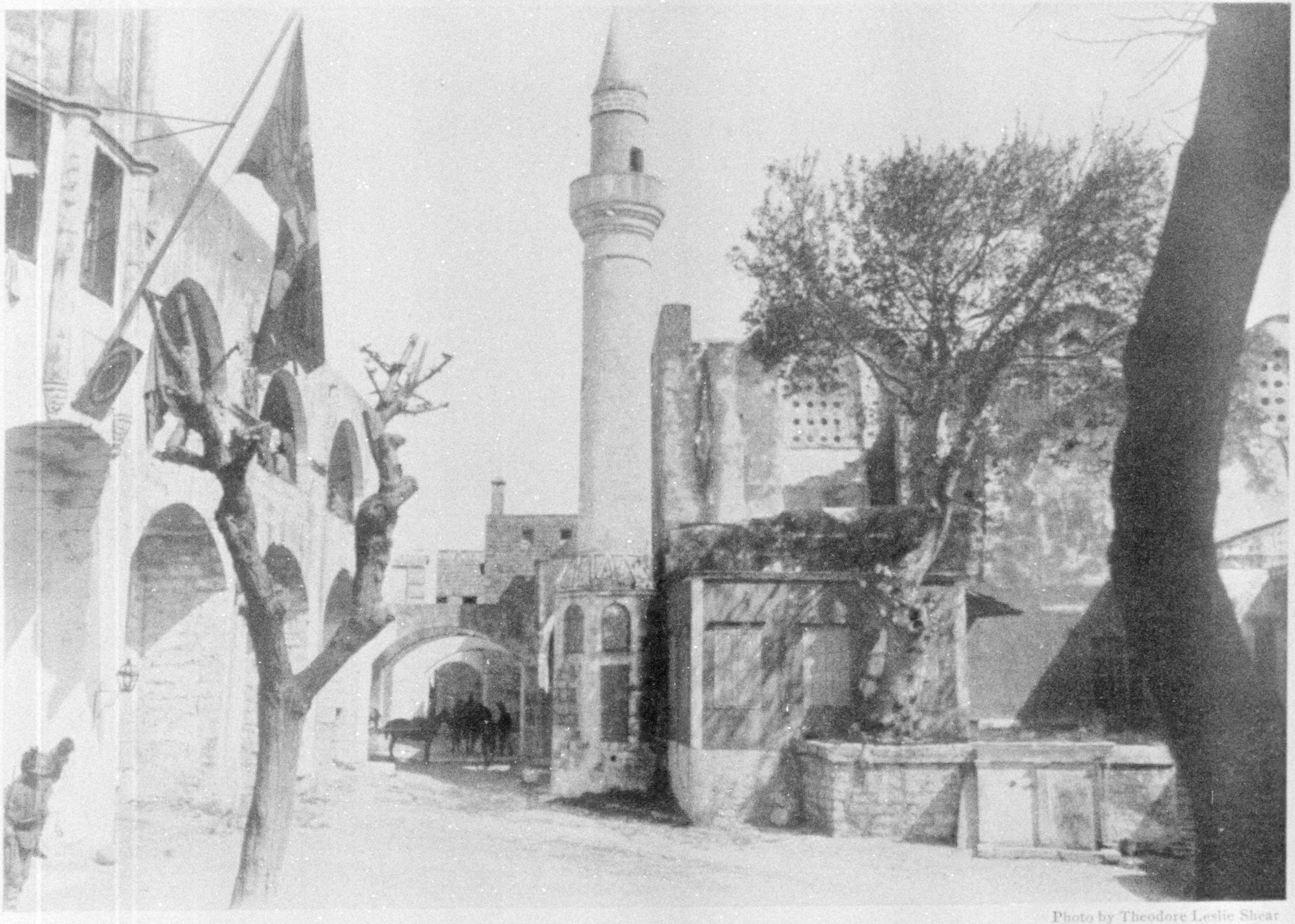


Photo by Theodore Leslie Shear

THE CHURCH OF ST. CATHERINE, TRANSFORMED INTO A MOSQUE AFTER THE TURKISH CONQUEST OF 1522: CITY OF RHODES

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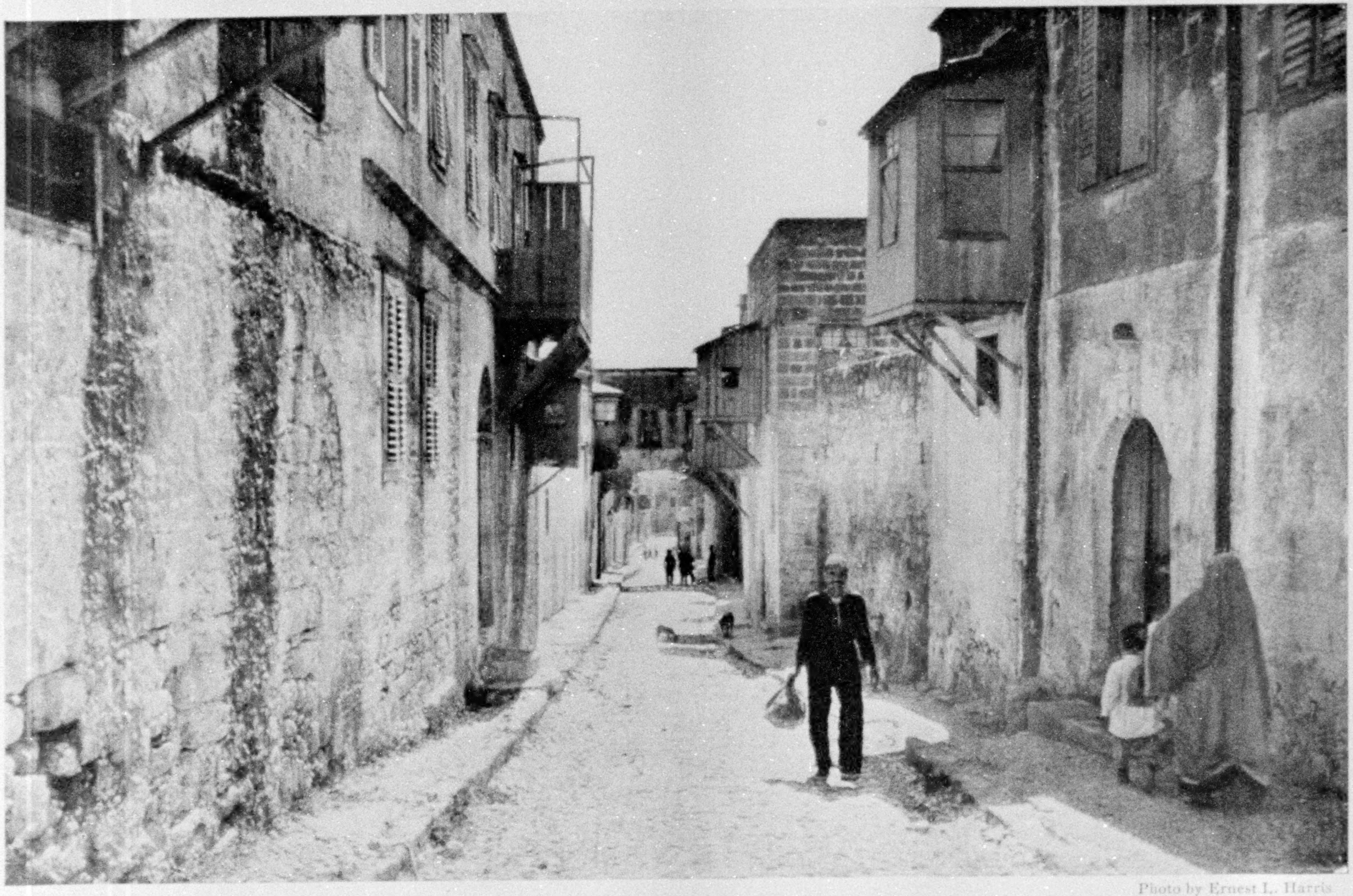

Photo by Ernest L. Harris

SCENE IN THE STREET OF KNIGHTS AT RHODES: ISLAND OF RHODES

The Knights built strong walls and towers, supplemented by broad moats, and constructed a convent, churches, a palace, barracks, hospital, and a meeting-house for different nationalities. They built so well that Rhodes today is little other than the city of the Knights

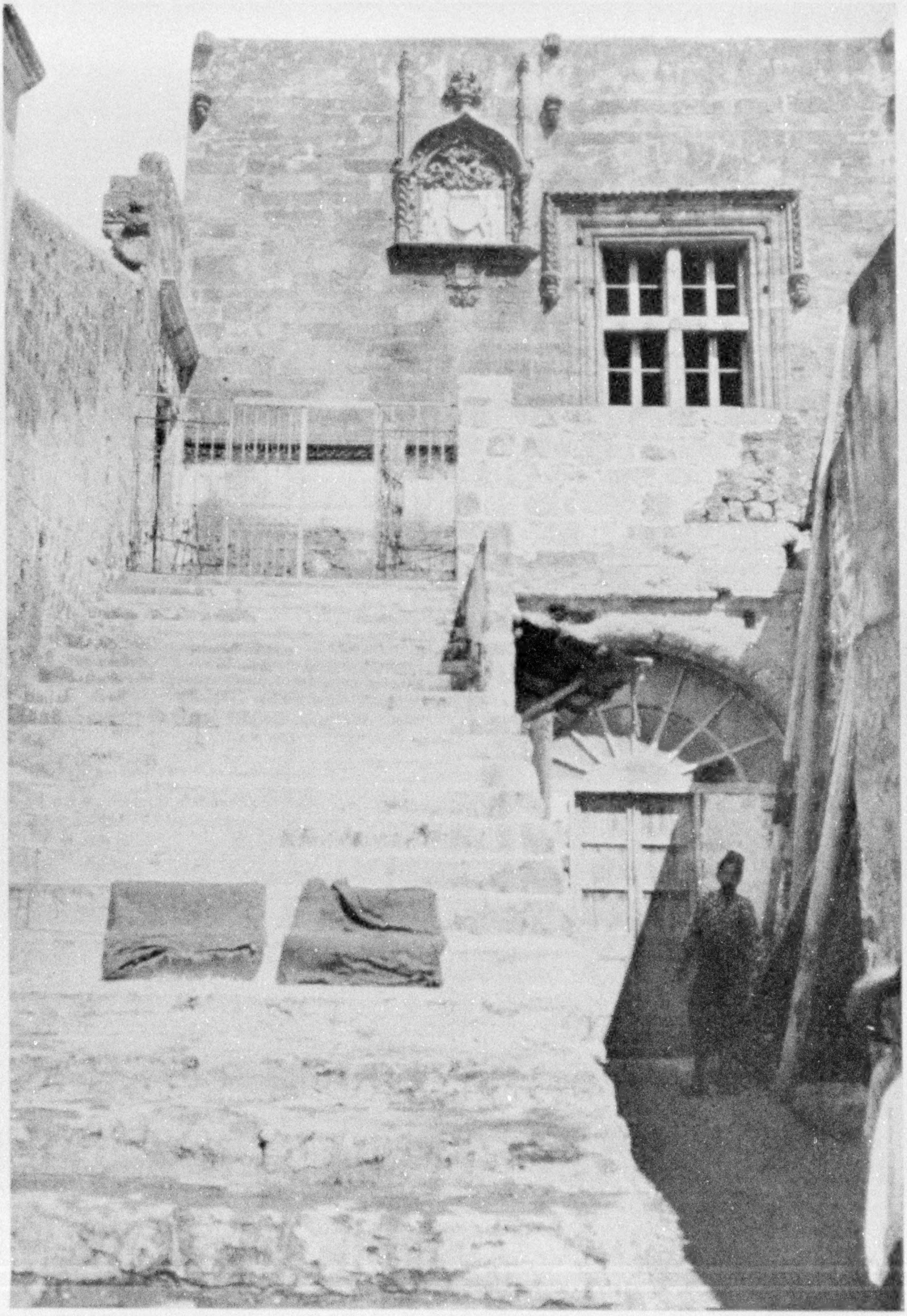

Photo by Ernest L. Harris

ANCIENT STAIRCASE AND RESIDENCE OF A KNIGHT OF ST. JOHN AT RHODES: ISLAND OF RHODES

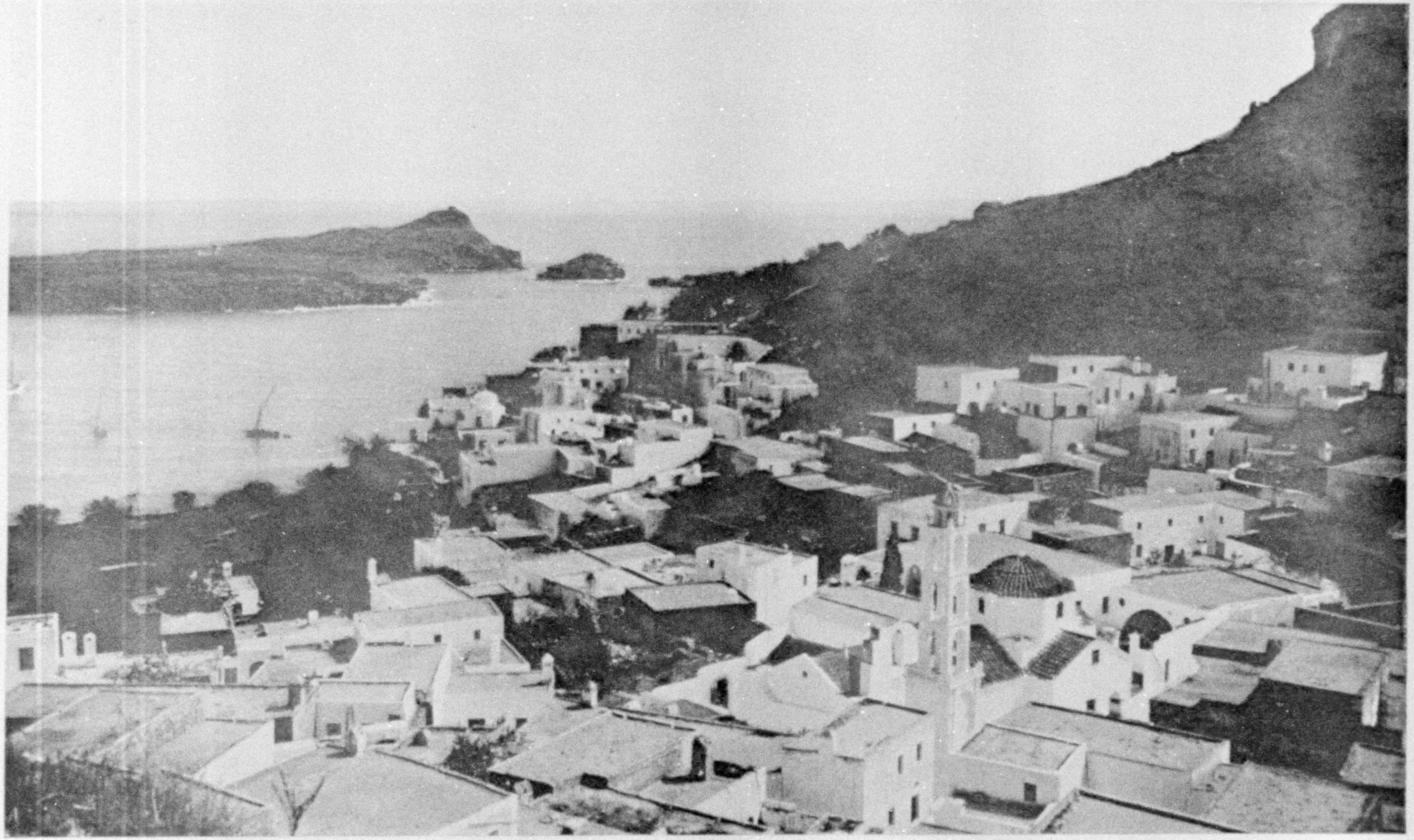

Photo by Theodore Leslie Shear

LINDOS, THE BEST NATURAL HARBOR IN THE ISLAND OF RHODES

Within the castle of Lindos archæological excavations have laid bare the foundations of the Temple of Athene Lindia, with its porticos and numerous inscriptions. On the approach to the citadel is a strange relief of a galley cut in a rock, and numerous rock-cut inscriptions

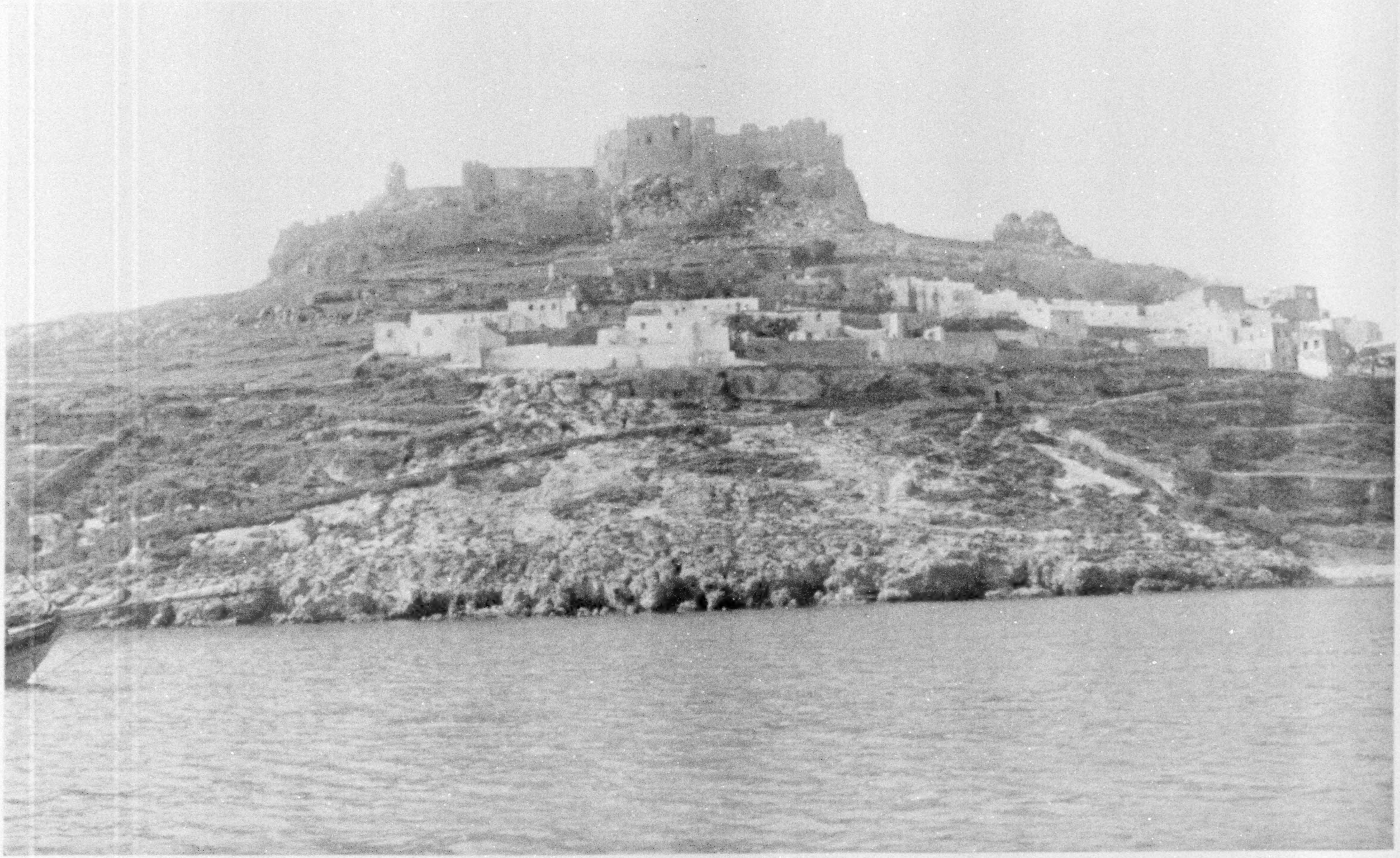

Photo by Theodore Leslie Shear

THE TOWN OF LINDOS, OVERSHADOWED BY THE CASTLE OF THE KNIGHTS: ISLAND OF RHODES

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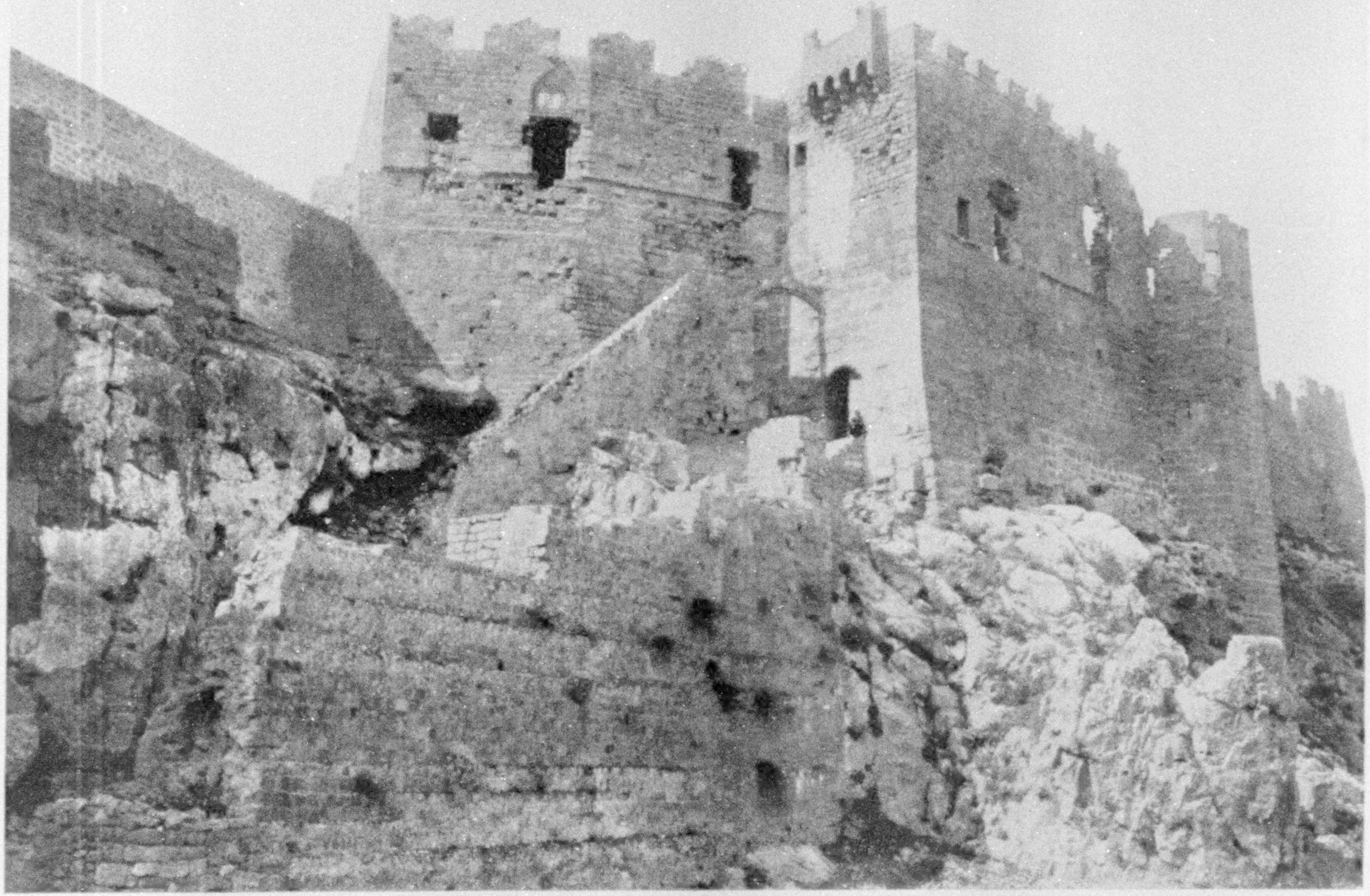


Photo by Theodore Leslie Shear

ENTRANCE TO THE CASTLE OF LINDOS: ISLAND OF RHODES

The arms of the order of the Knights of Rhodes appear near the top of the walls of the castle of Lindos. An idea of the size of the structure may be gathered by noting the comparative size of the man under the gate

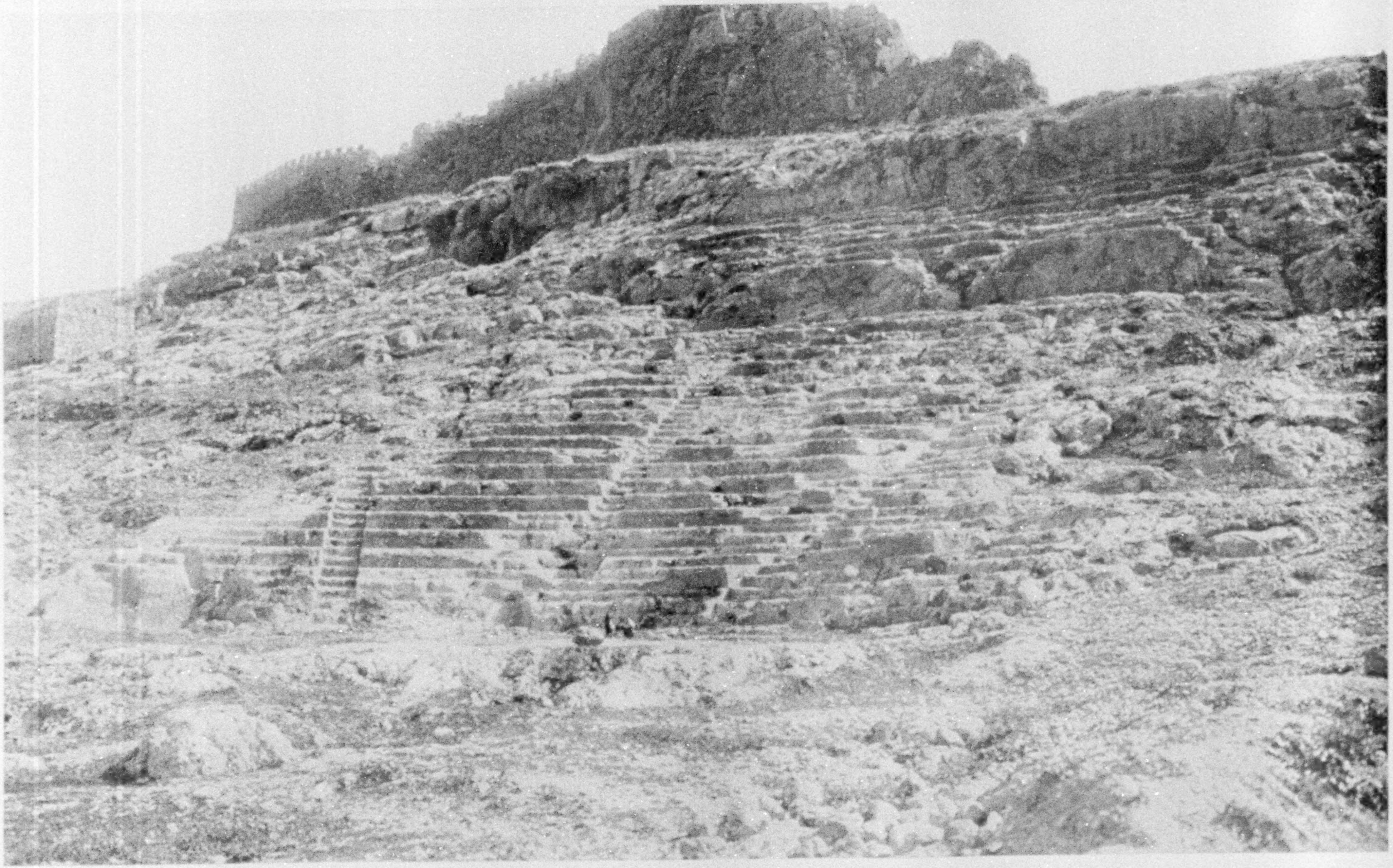


Photo by Theodore Leslie Shear

RUINS OF THE GREEK THEATER AT LINDOS, CUT IN THE SOLID ROCK OF THE HILLSIDE: ISLAND OF RHODES

In ancient times there were important schools of philosophy, art, and oratory in Rhodes, the latter having been attended by Cicero and Cæsar. Rhodes has always been famous for its climate. A friend of Cicero visited the island in the year 44 B. C. and wrote the great orator that he would like to spend the rest of his life there.

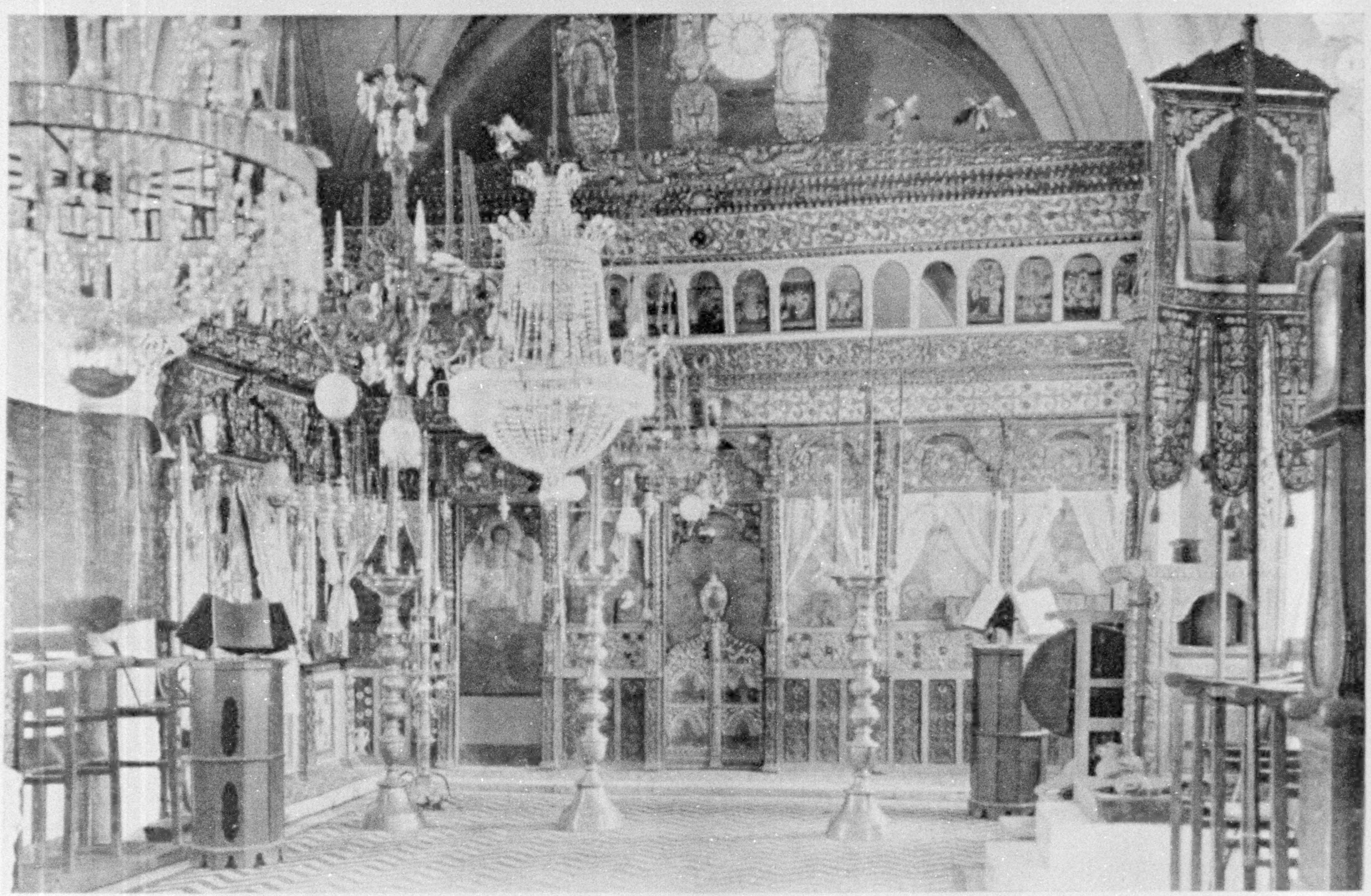


Photo by Ernest L. Harris

INTERIOR OF A GREEK CHURCH ON THE ISLAND OF RHODES

The liberty granted the people of Rhodes by the Sultan Suleiman allowed many excellent Greek churches and schools to be built. The conquest of Rhodes by Italy has brought the eastern and western churches back into close proximity once again water to the underground aqueduct in ancient times. I stopped for the night in a Greek cloister in that same valley, the priests doing everything in their power to entertain me.

With fish fresh from the sea, with figs just pulled from the trees, with melons, grapes, and nuts which had ripened and found their flavor beneath a Samian sun, we had a festive board which might rival the splendid feast given by Edmond Dantes in the fabled grotto on the isle of Monte Christo.

Toward sunset one evening I ascended to the top of the mountain above the cloister in order to obtain a beautiful view of the sea. There before me in the gloaming stood Mt. Mycale, dim and hoary, while the winding Meander flowed into the sea at its feet. The blue sea stretched away until it met the azure sky where Patmos stood, at an uncertain distance on the horizon, and the receding coast of Asia Minor extended away to the south until it became lost to view in the direction of ancient Halicarnassus. Immediately below, only a few miles distant from each other, are the scenes where two of the greatest naval engagements in ancient history were fought, namely, Lade and Mycale.

I have visited many times the scenes within reach of my field-glass from this point, and each time some new and lasting impression associated with the history of the past was left indelibly upon my memory.

With the aid of a powerful glass the plains of Miletus and Ephesus are brought into view, although the ancient cities lie several miles inland. In this connection I am reminded of the historian Freeman, who has said:

> "The sum and substance of history's tale can be heard in its fulness only on the spot which is its home. One must put rein on ten thousand memories, on ten thousand points of deathless history, every one of which become ten thousand times more living as we see them written forever on the everlasting page of the soil, the hills, and the sea."

Samos, like Chios, is the home of windmills. They are scattered everywhere along the roadside in the interior of the island, and they certainly are an asset as far as picturesqueness and interest are concerned. The two greatest industries of the island are the manufacture of cigarettes and the making of wine. Both are shipped to every part of the world.

### CIGARETTES FOR KOREA

While standing on the quay at Vathy I saw cases of cigarettes destined for Korea. The wine is largely shipped to Europe, where it is used chiefly for mixing purposes. In the summer time the harbors of the little island also offer good sport in yachting and fishing. The "chipouri" and "laveraki" of these waters have been famous ever since one of them swallowed the ring of Polycrates. Sea bathing at Samos from June to September is simply perfect. The yachting is excellent, but the treacherous winds which suddenly arise after a dead calm admonish one to exercise care. The pilot of the *Violet* was knocked into the sea by the boom once on account of the unexpected shifting of the wind. He managed to grasp the dingey which was being towed astern, and even this frail craft capsized before we managed to get the half-drowned man aboard.

The history of Samos since 1912 has been eventful. In April of that year, while the Tripolitan war was still in progress, two Italian ships of war entered the harbor of Vathy and torpedoed the small Turkish "stationaire" which had been kept there at the disposal of the prince. During the Balkan war the little garrison of a few hundred Turks was compelled by insurgents, Samians and Cretans, to retire to Smyrna. At the close of the war the Samians issued a manifesto declaring their union with Greece.

### THE ISLAND OF RHODES

"I have seen each distinct and separate place
Where stood the Seven Wonders of the world;
Their faded glories I have sought to trace
Where once their pagan banners were unfurled.
All! all are gone, and nothing now is left
Save outward tokens of a deep decline;
These ancient shrines have sadly been bereft
And scattered to the winds of every clime."

The history of the island of Rhodes may be divided into three periods, namely, from the earliest times to the days when it became a Roman possession; from the beginning of the Christian era to the establishment of the order of the Knights of St. John on the island; and, lastly, from the fourteenth century to the present time.

What Wisby was to the Baltic in the thirteenth century A. D., Rhodes was to the Mediterranean about 300 B. C. Owing to its favorable location on the great highway between Egypt and Greece, the island early rose to commercial importance. Its first settlers were the Dorians. The people were thrifty and skilled in handiwork, and they soon built up an extensive fleet, which not only enabled them to gain important possessions along the adjacent coast of Caria, on the mainland of Asia Minor, but they were also in a position to become the masters of the eastern Mediterranean as well. There were important schools of philosophy, art, and oratory, the latter having been attended by Cicero and Cæsar.

### THE DAYS OF THE KNIGHTS

With the advent of the Knights of St. John an interesting period began for Rhodes. This order was founded in Jerusalem in the eleventh century, and after many hardships finally found a home at Rhodes, where it assumed the name of the Knights of Rhodes. The power of the order was also gradually extended over a number of the smaller neighboring islands, as well as the coast of the mainland. Such a prosperous island early attracted the attention of the Turks, and after many wars the Knights were finally forced, in 1522, to retire to Malta.

From this time until the war with Tripoli, Rhodes was under Turkish rule. In May, 1912, an Italian fleet landed a force on the island and in a short time compelled the small Turkish garrison to capitulate. At the present time the island is being held by Italy.

The most interesting things to be seen in Rhodes are the walls and buildings connected with the days when the Knights ruled on the island. The walls, in fact, may be classed among the finest monuments of medieval architecture now extant; the towers and bastions are, for the most part, in a state of splendid preservation, and the whole is surrounded by immense moats. In many of these moats huge cannon-balls have been piled up as a grim reminder of the fierce sieges which these walls have withstood.

The so-called Street of Knights remains about the same as it was in the fifteenth century. The arms of the various orders are engraved on many of the houses, some of which are occupied by Moslems today, and the windows have been somewhat disfigured by lattice-work which has been placed there in order to conceal the women of the harems.

### THE COLOSSUS DESTROYED

Every vestige has disappeared of the Colossus of Rhodes, the great bronze statue in honor of the god Helios erected at Lindus in 285 B. C. This statue stood 112 feet high and was known as one of the Seven Wonders of the ancient world. Many place the ancient site on a narrow strip of land which extends into the sea at the entrance of the harbor—that is, the point which today is surmounted by Fort St. Nicolaus—while others claim that it stood well within the harbor. After standing for only 56 years it was hurled down by an earthquake, and after lying about the ground for nearly 900 years the fragments, consisting chiefly of bronze, were sold to a Jew at Homs, in Syria. It is claimed that 900 camels, in a single train, were employed to bring it to that town, a distance by land of at least 500 miles.

According to an Italian census of the city of Rhodes taken in 1913, the population numbered 13,744; namely, 4,890 Moslems, 4,290 Jews, and 3,564 Greeks, making practically an equal division among the three nationalities. The Jews and Moslems are crowded, for the most part, within the walls, while the Greeks are spread around among the little suburban villages.

The Jews form an interesting part of the population, and in many instances are as typical of this race as can be found in any place in the East. While retaining their religion in every respect, they have adopted the manners, habits, and mode

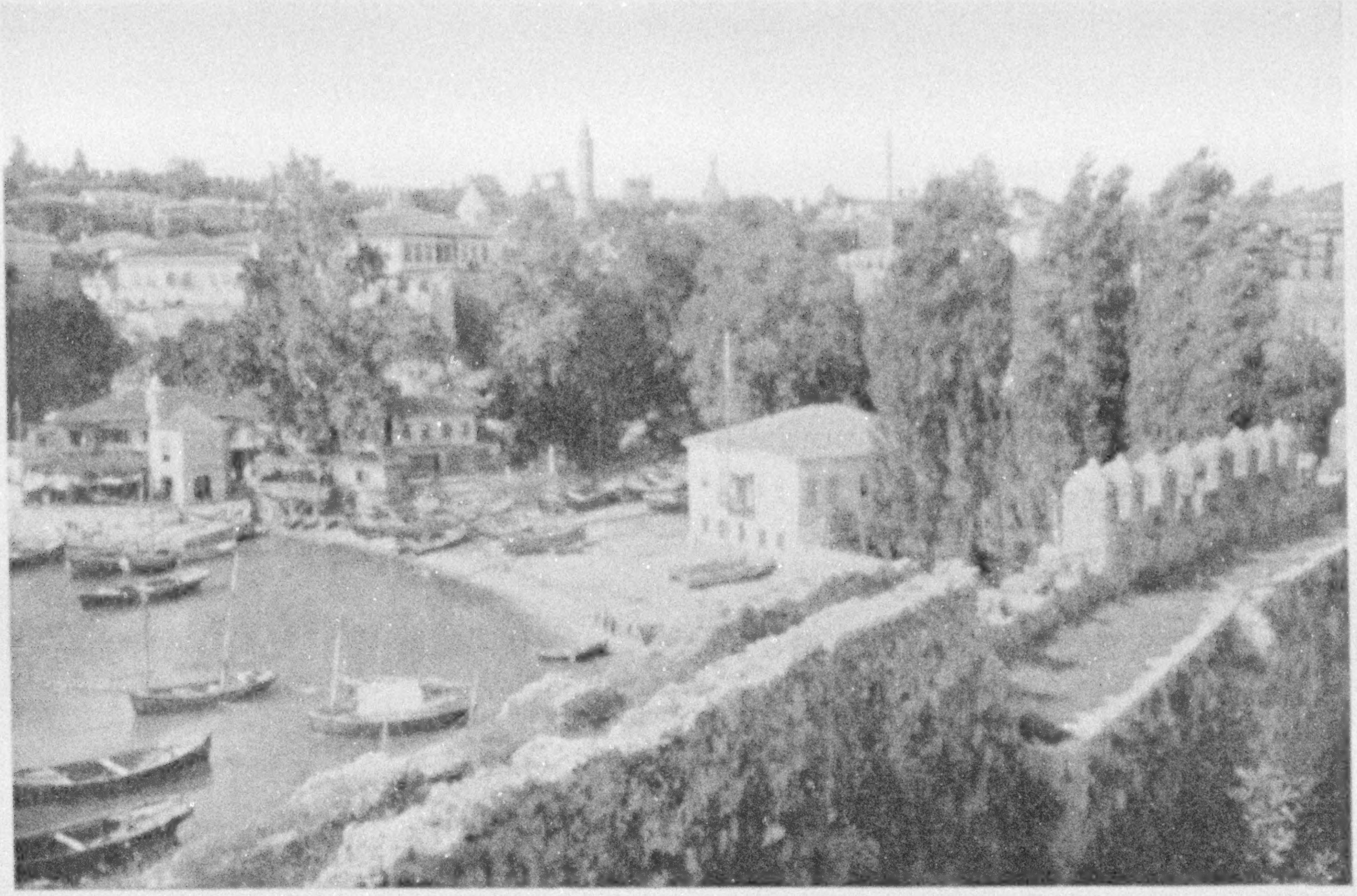


Photo by Ernest L. Harris

THE INNER HARBOR OF ADALIA FROM THE ANCIENT WALLS: SOUTHERN ASIA MINOR

"On the southern coast of Asia Minor, in a far corner of the Gulf of Adalia, is situated the picturesque modern town of Adalia. Few towns in Turkey can vie with it in real genuine interest from the viewpoint of presenting to the stranger a deep insight into the habits and customs of the people" (see text, page 258).

of living of the Turks. This also applies to their dress, and the interior of their households can scarcely be distinguished from those of the Moslems. Only the Jewish women go about unveiled.

The young girls wear a costume native to the island, and the most of them are bright and attractive in their appearance and manners. I saw one of these girls wearing a string of 20-dollar gold pieces around her neck worth several hundred dollars. She told me that her sweetheart had gone to America a few years before and had sent them to her from time to time as a present. After the proclamation of the Turkish constitution, in July, 1908, many of the Jews emigrated to America.

I made an excursion along the coast to the ancient site of Ialysos, which was one of the earliest Dorian settlements on the island. Few Hellenic remains are left to tell the tale. The rewards of this journey, however, lie chiefly in seeing something of the country people of the island, who are for the most part Greek.

The Greek schools and churches are very good, considering the fact that the people practically live from hand to mouth. Farming methods are wholly primitive. The ancient plan of irrigating from wells is still in vogue. The water is lifted and poured into ditches which lead from the well in different directions over a field.

The climate of Rhodes is splendid, and the island is sought by many as a summer resort. The bathing is excellent, and a fairly good hotel has been built for the accommodation of strangers. The commerce of the island consists chiefly in an export trade in fruit and vegetables.

## A FEAST IN LYCIA

Whoever makes the trip by steamer from Rhodes to Adalia by clear weather has added a chapter to his experiences which will undoubtedly be classed among the fondest recollections of later life. To the right lies the broad expanse of the Mediterranean stretching away to the shores of Palestine and Africa, while to the left the snow-capped mountains of ancient Lycia pierce the azure blue of the firmament. The scene is varied by a changing view of immense precipices over which plunge thundering torrents of melted snow into deep gorges, cut into the lower hills which separate the higher ranges from the plain and sea.

Situated not far from the coast is the site of ancient Xanthus, a city full of celebrity in days gone by. The ruins are situated on the river Xanthus, mentioned in the songs of Homer. Under the reign of Cyrus a Persian army stormed and carried the city, but the inhabitants preferred death to bondage and nearly all perished at the hands of the conquerors. This calamity was repeated by Brutus after he had murdered Cæsar, the people of Xanthus again preferring death to subjugation.

A stay at Fineka enables one to study the life and customs of the natives in a section of Asia Minor seldom visited by a stranger. Everything is primitive, and, with the exception of a few large estate owners, the people are wretchedly poor. They live in miserable huts, which neither keep out the cold of winter nor the heat of summer. Another thing I noticed in this section was the large number of genuine African negroes who have lived and intermarried with the Turks for generations past. They were all Moslems in religion and there was absolutely no distinction made among them as far as race and color were concerned.

### A WAYSIDE LUNCH

I stopped one day for lunch in a large estate near the ruins of Limyra. The place was surrounded by a grove of orange and lemon trees, which afforded cool shade from a hot June sun. My host was a genuinely hospitable Turk and the lunch was served according to the customs of the country.

We all sat down on a large straw mat in the center of a room which, for furniture, could boast only of a bench around the side and a few Turkish framed inscriptions on the walls. We squatted down indiscriminately—pasha, donkey-drivers, and peasants—forming a large circle, in the center of which was placed a big tureen of boiling rice soup, from whose top extended ten wooden ladles or spoons.

This soup was not served on smaller plates, but each leaned forward and helped himself from the tureen at every mouthful.

A whole boiled chicken was then passed around by an attendant and we satisfied our hunger by pulling off a leg or a wing, as occasion suggested. Some of these Turkish dishes are excellent, however, no matter how crudely they may be served.

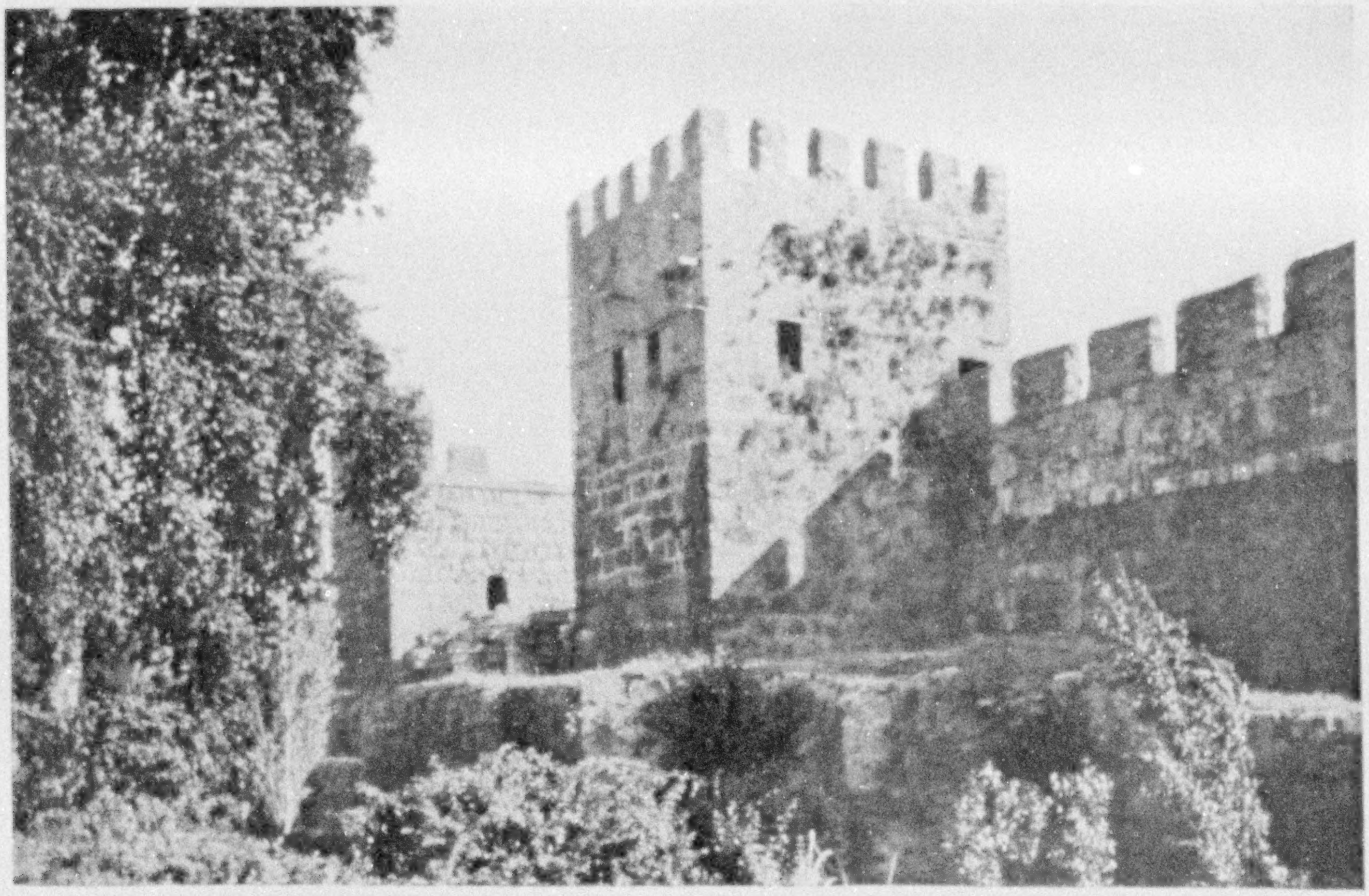
And when you are living in camp and in the saddle the Turkish way of serving meals quite appeals to you. This particular lunch in question was typical in every respect, and further courses of pilaff and jaghurt, with oranges fresh from the trees for desert, as well as genuine Turkish coffee and cigarettes, made us all ready for the siesta which invariably follows in this part of the world.

### PICTURESQUE ADALIA

On the southern coast of Asia Minor, in a far corner of the Gulf of Adalia, is situated the picturesque modern town of Adalia. Few towns in Turkey can vie with it in real genuine interest from the viewpoint of presenting to the stranger a deep insight into the habits and customs of the people. The harbor itself is small but deep, and only little coasting steamers can anchor well in toward the quay.

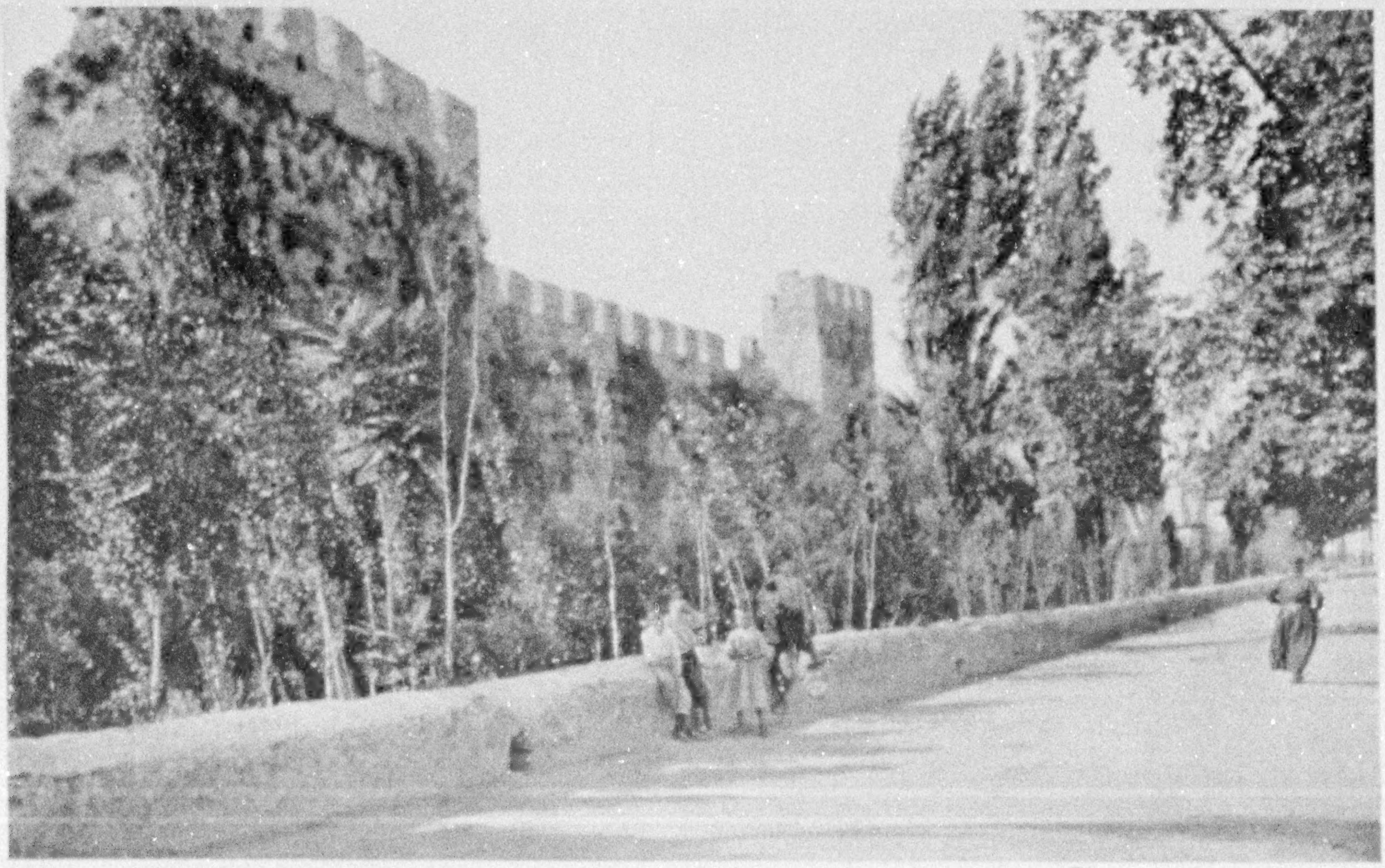
The town has been built upon a cliff 120 feet high, which commands the sea and over which tumble innumerable streams of clear, cold water that have their sources far up among the distant snow-clad mountains. These streams serve at the same time to irrigate magnificent orchards of figs, pears, and mandarins.

One sees in every part of Adalia pieces of ancient sculptures used as adornments in the walls, street corners, doorways, courtyards, and fountains. About the only antiquity, however, that has retained its original position is the splendid wall, which had been preserved almost in its entirety, although belonging to different epochs of history, and which has naturally been patched and repaired frequently during the hundreds of years of



A VIEW OF THE SPLENDIDLY PRESERVED WALLS AROUND THE CITY OF ADALIA: SOUTHERN ASIA MINOR

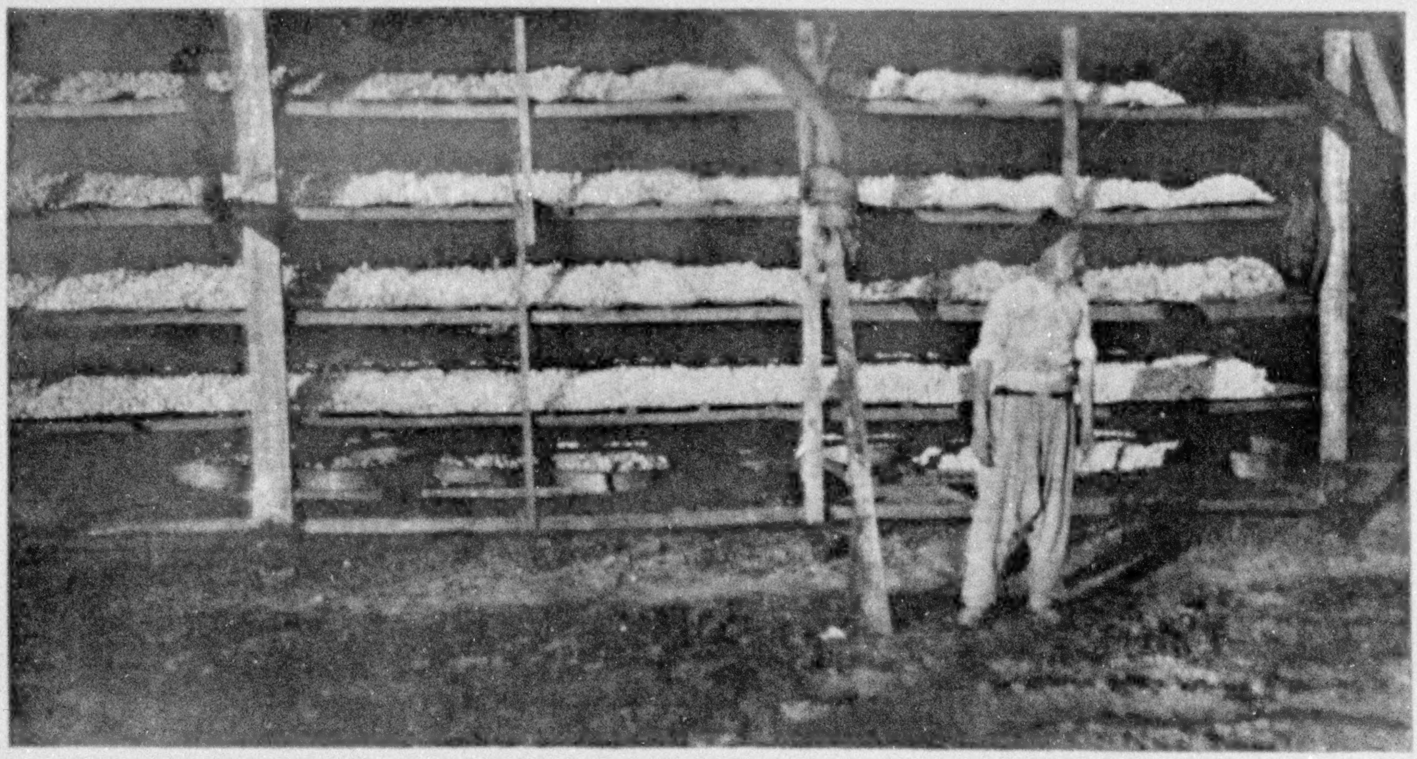
This wall in many respects is similar to the one at Wisby, on the island of Gotland, in the Baltic Sea. Though patched and repaired frequently during the hundreds of years of its existence, it has been preserved almost in its entirety.



Photos by Ernest L. Harris

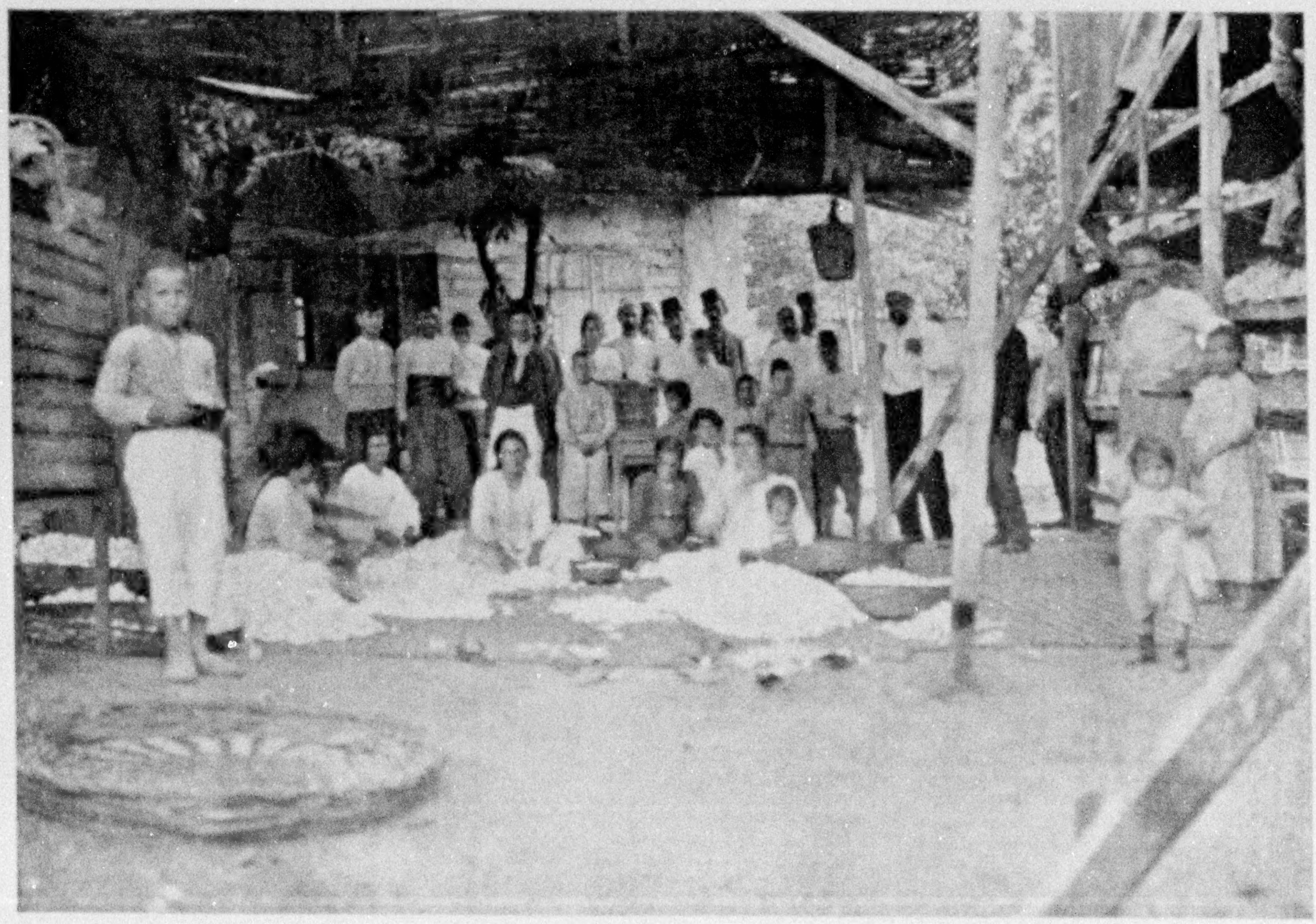
ANOTHER SCENE IN THE TOWN OF ADALIA, SHOWING THE ANCIENT WALLS EXCELLENTLY PRESERVED: SOUTHERN ASIA MINOR

"The town has been built upon a cliff 120 feet high, which commands the sea and over which tumble innumerable streams of clear cold water that have their source far up among the distant snow-clad mountains" (see text, page 258).



SILK CULTURE AT ADALIA, IN ASIA MINOR, SHOWING COCOONS

"Adalia has a considerable silk industry, the climate of this section being conducive to the growth of the mulberry tree. The cocoon sheds are erected outside the city limits" (see text, page 261).

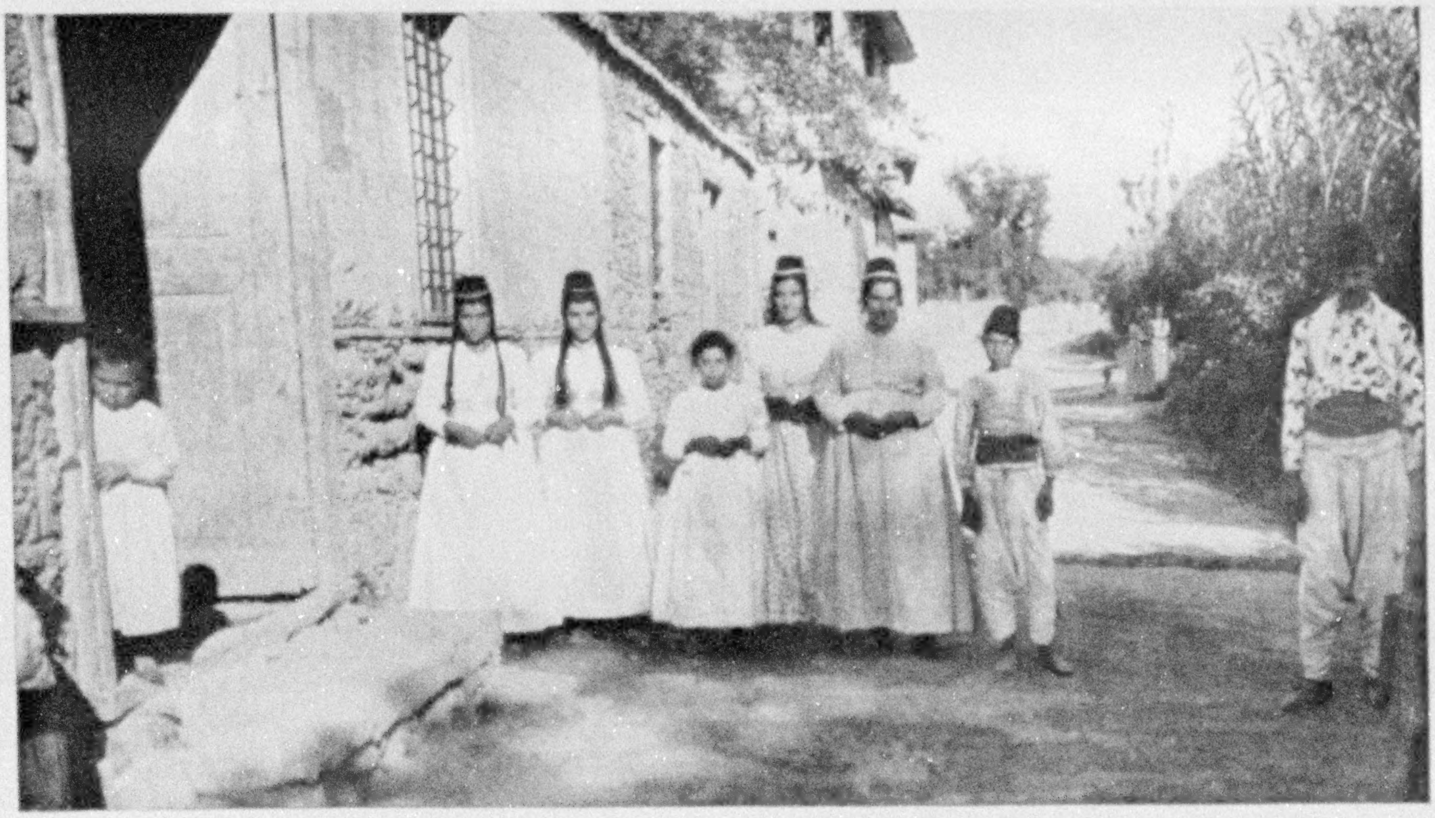


Photos by Ernest L. Harris

AMONG THE SILK WORKERS AT ADALIA: SOUTHEASTERN ASIA MINOR

"In some places the streets of Adalia are very narrow, and the balconies of many of the houses project outward one above the other to such an extent that two persons can almost join hands across the street from the upper stories" (see text, page 261).

XUM



THE MOREATES OF ADALIA, ASIA MINOR  Photo by Ernest L. Harris

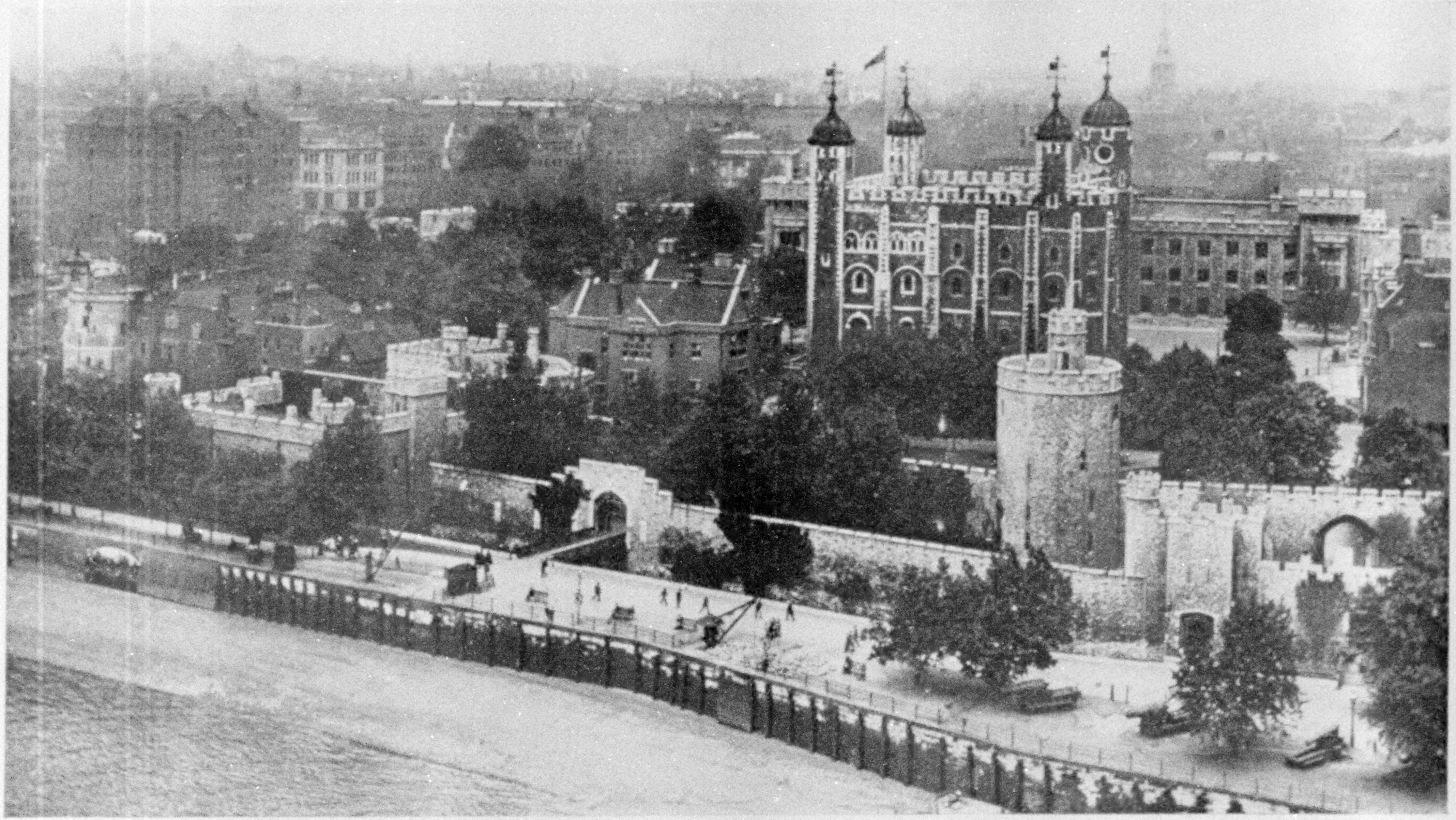
A most interesting tribe of people living at Adalia are the Moreates. Their ancestors left Greece after the revolution, and, with the exception of their religion, they have become Turks in manners and customs.

its existence. The wall around Adalia is similar in many respects to the one at Wisby, on the island of Gotland, in the Baltic Sea.

Adalia is noted for its dancing dervishes. Greeks of this section have lived so exclusively among themselves for generations that they have retained many ancient habits of their race. This is also true of the Jews who reside here. The bazars and mosques are also extremely interesting, inasmuch as they have retained their distinctly Turkish character since medieval times. In some places the streets are very narrow, and the balconies of many of the houses project outward one above the other to such an extent that two persons can almost join hands across the street from the upper stories. In this respect many of the streets of Adalia remind me of similar streets in Brunswick, Germany.

Adalia also has a considerable silk industry, as the climate of this section is conducive to the growth of the mulberry tree. The cocoon sheds are erected outside the city limits and are interesting, for the reason that the laborers employed are made up of the different nationalities residing in this district.

The islands of the Ægean taken together constitute one of the most historic and interesting insular regions in the world. Besides the twenty principal ones, which have lent much to history, there are innumerable smaller ones. Eubœa, the largest of all, lies close to the seacoast of Greece; Thasos borders the Macedonian coast; Samothrace lies near the Gulf of Saros, while Imbros and Lemnos are prolongations of the Gallipoli Peninsula. The northern Sporades include Sciathos, Scopeles, Haloneses, and Scyros, with its group of small islands. Chios, Samos, Nikria, Cos, and Calymnos lie along the west coast of Asia Minor. Andros, Tenos, Naxos, and Paros belong to the great group of the Cyclades, of which they are the largest. Many of the Ægean islands are actually prolongations of promontories jutting out from the mainland. Some of them are of volcanic formation. The larger islands have a number of fertile and well-watered valleys and plains, the principal products of which are wheat, wine, oil, mastic, cotton, silk, raisins, honey, and wax. Coral and sponge fisheries are numerous, and in most of the islands the ancient Greek type perseveres among the people.



THE TOWER OF LONDON

Viewed from the approach to Tower Bridge, the Tower of London today tells little of the tragedies enacted there in centuries agone. First a palace, then a fortress, it became a state prison, where many an illustrious head fell into a guillotine basket. Today it is a government arsenal, where are housed alike the royal regalia and war munitions.

# LONDON

## BY FLORENCE CRAIG ALBRECHT

*Illustrations from photographs by Emil Poole Albrecht*

THERE are so many Londons in one London, where begin with them? The London of Roman and Saxon, of Norman and Plantagenet; the London of Chaucer and Shakespeare, of Lamb and Dickens and Thackeray; the London of clubs and hotels; the London of factories and sweat-shops; the London that administers the affairs of empire, and the London that dances and plays cricket. There is the summer London of the tourist; there is social London revelling in May; there is the November London of smoke and fog, busy and inhospitable; there is today a darkened London, somewhat apprehensive, but grimly determined, a London different from any we have known. They are each London, and all London—the greatest city in the world.

### THE WORLD'S GREAT CITY

Older capital cities than London there are a few in Europe, greater there are none. Putting aside all unproven tradition, its history begins with the coming of the Roman legions. Rome, seven centuries old, was in her pagan prime, but Paris, then Lutetia, was an island hamlet in the Seine; Vienna was a small Roman camp; Berlin did not come into existence for many a century thereafter; Madrid first appears a thousand years later; Brussels was founded in the sixth century, Amsterdam about the 13th of our era. These count not at all in London's age.

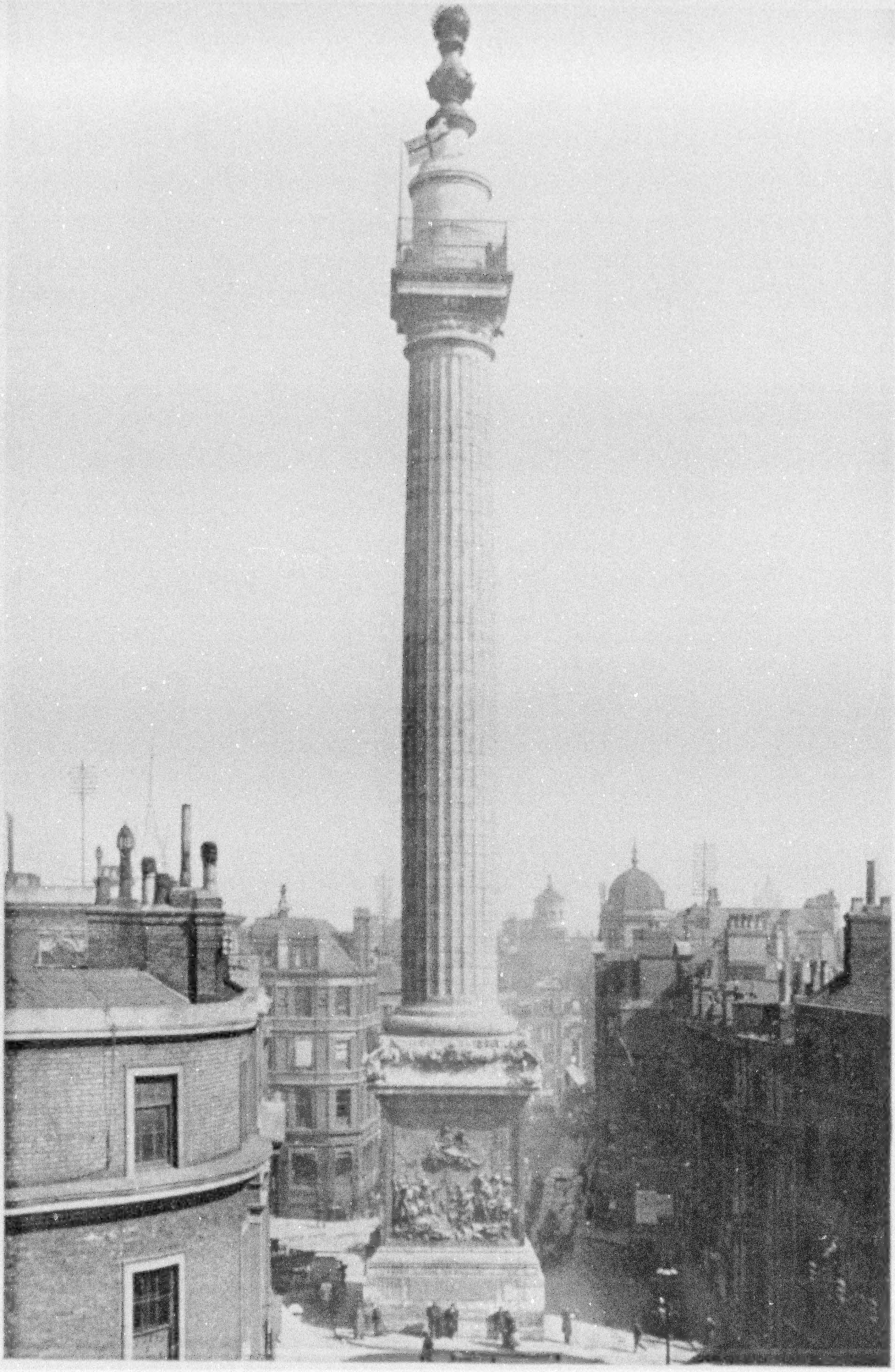
And while we are busy with figures let us give a few more and have done.

The city of London, the commercial heart of the metropolis on the site of British hamlet and Roman town, measures about a mile square. In the daytime its inhabitants number more than 300,000; at night not a twelfth that number sleep there—land is too valuable for residence. During one day a million and a half of people pass through its gates. Beyond it and across the river spreads another London, of five million people, over 130 square miles (approximately 14 x 10 miles), and beyond that "Greater London," the district covered by the Metropolitan and city police, with 700 square miles and more than seven million inhabitants.

### SIDELIGHTS ON ITS SIZE

Her streets, straightened and laid end to end, would reach from New York to San Francisco. Of her 650,000 buildings, 500 are hotels and inns. One hundred thousand Americans pass through them in peaceful summers and 15,000 resided there before the war. It is a common saying that "there are more Scotsmen in London than in Aberdeen, more Irish than in Dublin, more Jews than in Palestine, and more Roman Catholics than in Rome." That surprises us less than it does Europeans; it might also be true of New York. London's foreign population concerns us very little, nor does the East End now surprise.

The East End, beyond the "city" and the Tower, is a manufacturing district, tenanted largely by Jewish tailors. There are other industries, but the race predominates. The West End is the home of fashion and of power. Its residents are not true Londoners, although they would resent the assertion; they are sojourners for a more or less brief time. Between these ends lies real London—all the year, every day, native London—with all its wealth of long and tremendous history, of literary and legal repute, of commercial prestige, of architectural fame. The district across the river concerns the American visitor only in a few definite interests; all of London for him lies in a mile-wide band along the Thames, from the Tower to Westminster; but so rich is it that when he would summarize his impressions, he finds neither beginning nor end.



THE FIRE MONUMENT: LONDON

This Doric column was erected by Sir Christopher Wren to commemorate the great fire of London in 1666, which commenced near by, in Pudding Lane, and destroyed 13,000 houses and 89 churches. Splendid views of London are to be obtained from the landing near the top.

### A LOVER OF LONDON

Once an American went to England as to his childhood's home. He carried to it an inheritance of memories, a ready sympathy; it offered to him a certain strangeness, yet a sweet familiarity that puzzled and enthralled. Today so many of our fellow-citizens look to Germany, Poland, Switzerland, Italy, Russia, or France as their forefathers' home, it cannot be true; yet wherever the English tongue is spoken, wherever English history is known and English literature read, there is a constant preparation for the assured treading of London pavements, for enthusiastic recognition of revered spots and deeds and names. I think it is Mr. Howells who says, "You may not like London, but you must love it." I quite agree, and because I love it and because one hesitates to speak of those one loves, fearing to say too much or yet too little, I cannot come to any clear description.

In the days when I was so young that I thought myself quite, quite old, I lived for many months in a hotel that looked down upon High Holborn just where Chancery Lane opens. It is not a location that any tourist would choose today. I am not sure that he would have done so then. I was not a tourist. There were reasons why I should be there and I was there.

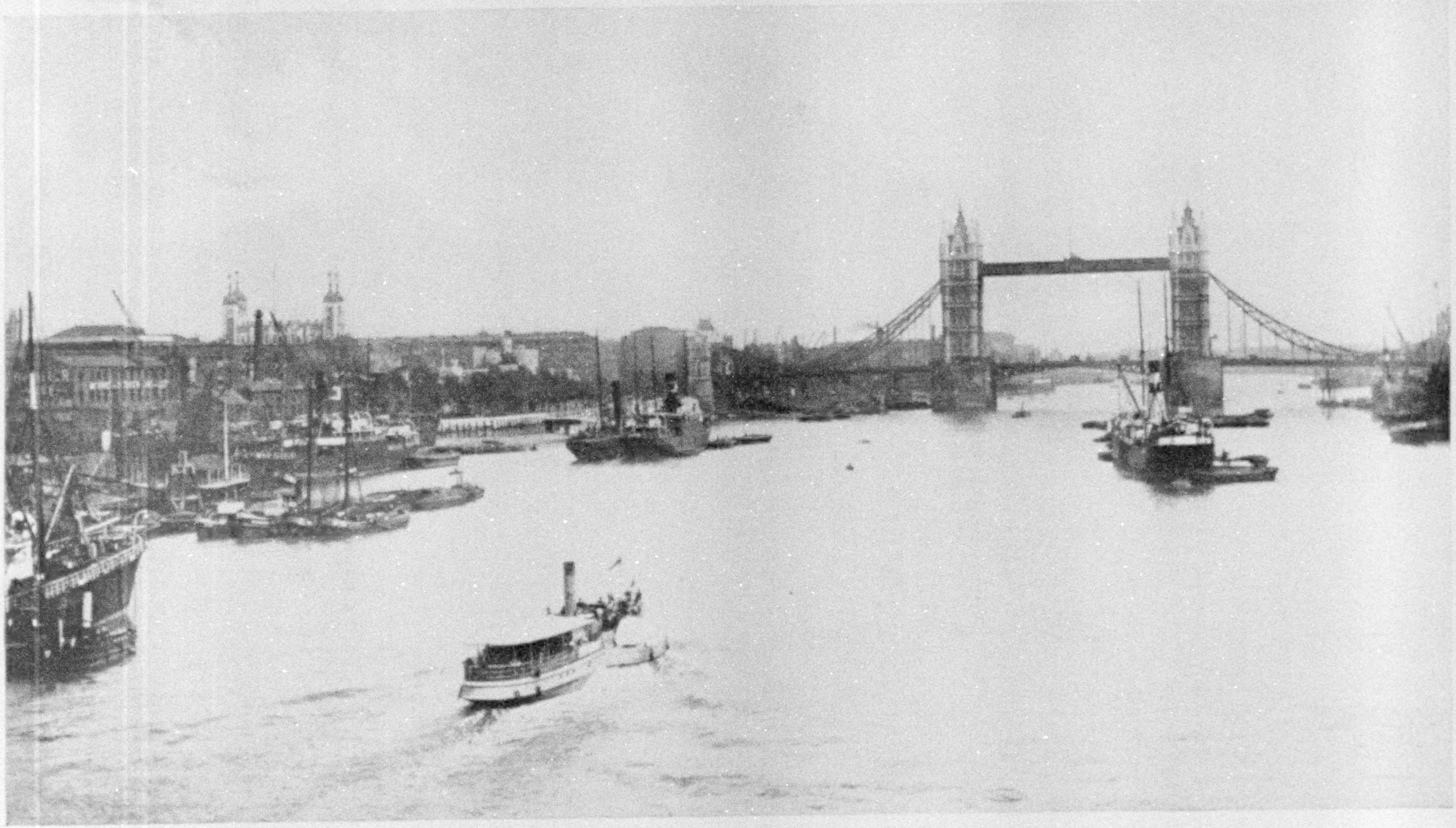
### A NEW HIGH HOLBORN

I do not recall the motive, whether I or some one was ill, or if it was merely the call of the summer night; but I remember very clearly leaning with folded arms upon the broad, low window seat, far out over the silent street, at some hour just before the dawn of a June day. Always, when I had seen it, that street had been a tangle of omnibuses, hansoms, bicycles, drays, carts, and wagons struggling to or from the "city," twisting in and out of Chancery Lane. Always the air had been filled with cries—vendors, newsboys, teamsters—loudest of all those of the rival 'bus lines: "Chipside or Bink! Penny all the wye! Penny all the wye! Chipside or Bink! Bink! Bink!" No matter how late I had gone to bed, the hubbub of voices, feet, and wheels had come to my window.

This time the street was still. Under the light on the corner stood a policeman, quiet but alert; in the shadow of a doorway slouched a figure, not a policeman, also quiet. Idly I watched them both, and in the silence there came to my ears the sound as of a great distant waterfall or of a well-oiled, contented dynamo. It rose and fell gently in the summer night—a deep, full note, softly trilled. I have heard it many times since that night; heard it from a window opening on Trafalgar Square; from a balcony in Mayfair; a terrace by the river; listened for it deliberately then and at other hours and in other cities. The noises of the day overlie it as the treble covers the pedal notes of an organ, but it is there. I do not find it in other places—Paris, Philadelphia, New York, or Rome. Night noises there are, but each distinct—the whistle of a boat on the river, the rumble of a train, the hoot of a motor-car. This, however, is not noise; it is a drone—the combined whirring and buzzing of many wheels and men toiling while the city sleeps.

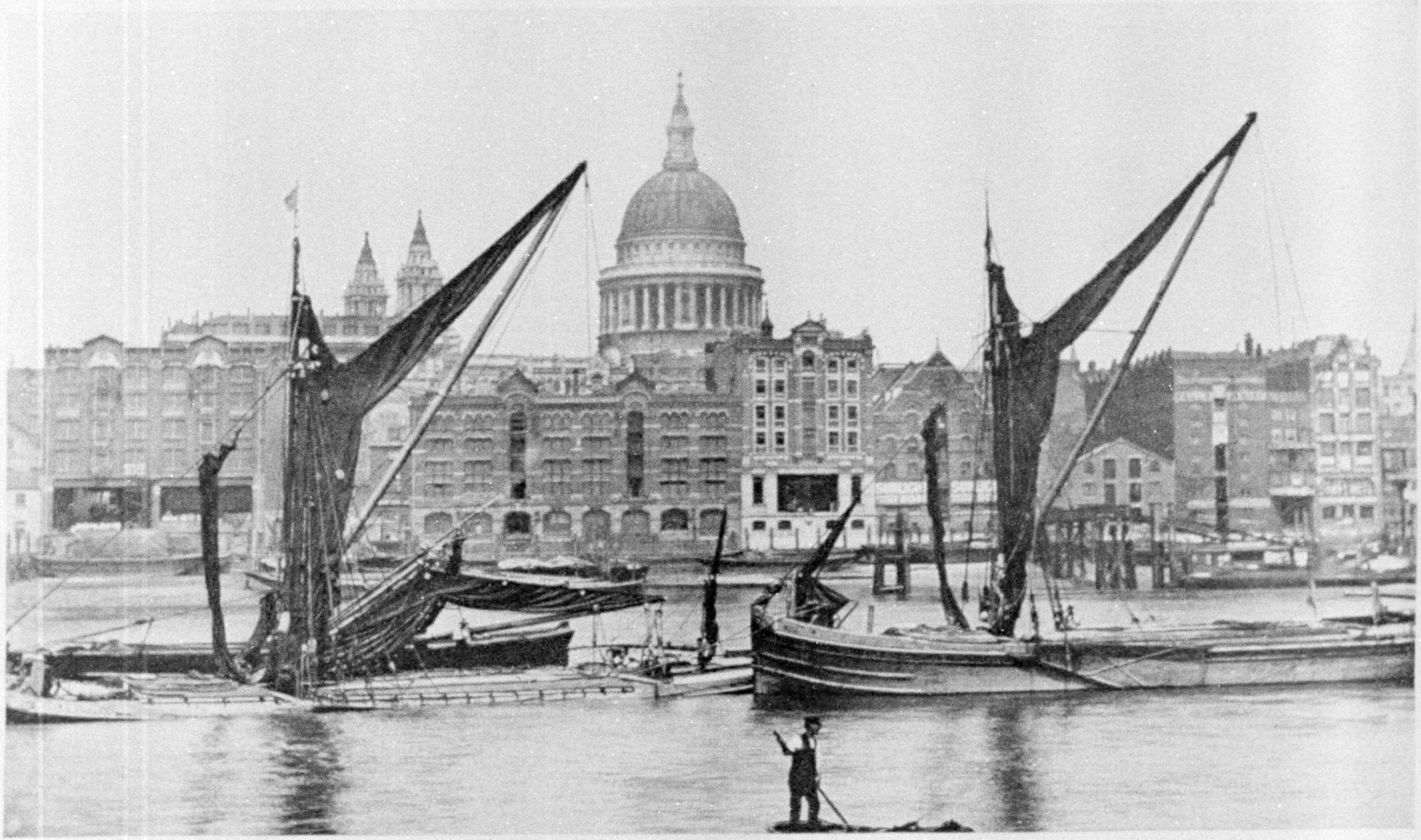
### ECHOES OF THE PAST

And for those who have ears to hear, it is more than that. It is the tramp of Roman legions investing a squalid British hamlet; it is the battle-cry of Saxon and of Dane; it is the shout of the Norman conqueror, the echoes of the mallets of his builders; it is the gay songs of courtiers riding to this or that palace on the Thames; it is the chant of many psalms, the sob of martyrs; it is the thud of oars in muffled rowlocks, as a barge slips down the river from the judgment hall of Westminster to the Traitor's Gate at the Tower. It is the laughter of masques and revels in inns of court halls and gardens; it is the moan when a king dies by Whitehall; it is the frenzy born of plague and of fire; it is the babble and yells of roisterers, the drone of nuns; it is the acclaim of a new prince and a new crown. It is all these and more—it is the throbbing of a city's heart; it is the voice of many peoples through two thousand years.



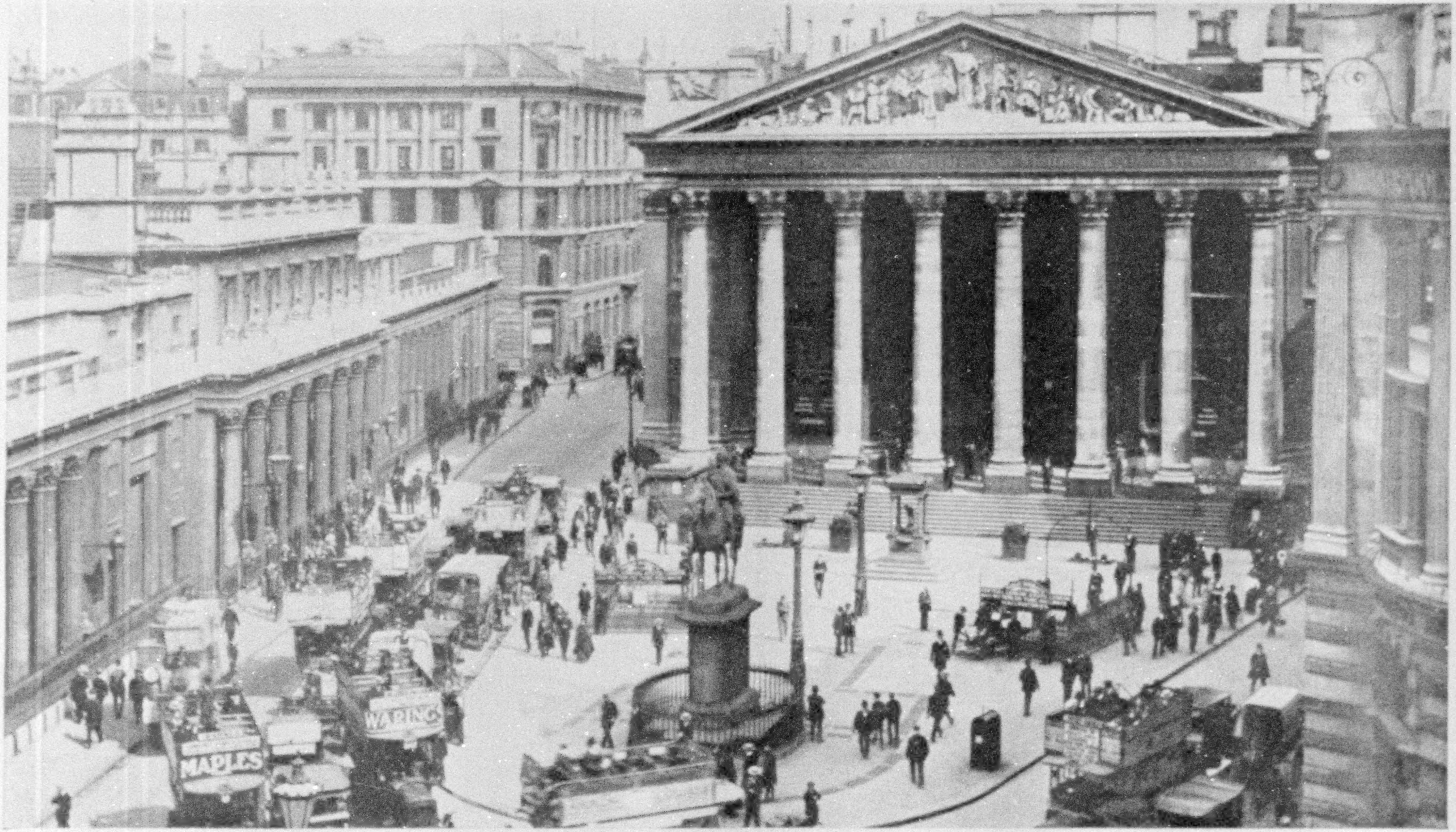
THE RIVER THAMES, THE TOWER, AND THE TOWER BRIDGE: LONDON

No river of its size in the world is spanned by so many bridges within the limits of a single city as the Thames, there being fourteen of them within the county of London alone. In spite of the relief afforded by the Tower Bridge, opened in 1894, London Bridge carries 22,000 vehicles and about 110,000 pedestrians every day. The part of the river below the Tower Bridge is the busiest part of the dock region of London.



ST. PAUL'S CATHEDRAL AND THE RIVER THAMES: LONDON

"The grouping of the city's parish churches about St. Paul's, the contrast of their delicate, graceful spires with the huge brooding dome, is perfect" (see text, page 269)



THE BANK OF ENGLAND AND ROYAL EXCHANGE: LONDON

The exterior walls of the Bank of England are entirely devoid of windows, the bank being, for the sake of safety, lighted from interior courts. It is the only bank in London with the power of issuing money. About a thousand people are employed within its walls, and its vaults contain in normal times about one hundred million dollars' worth of gold and silver. The weighing office contains machines which weigh sovereigns at the rate of thirty-three per minute, throwing those of full weight into one compartment and the light ones into another. Half a million dollars' worth of gold is thus tested daily.

It does not come directly from the "city," yet the "city" is responsible for it—the little ancient city, where the Lord Mayor rules, in the medieval splendor of velvet and fur and lace when he goes on the 9th of November to take oath of office in his great golden chariot, all bobbing and quivering on its huge springs with the weight of his magnificence, and in the dress of an English gentleman all the other days of the year. This is the city built on the site of Briton hamlet, Roman camp, Saxon stronghold; the city which has been ravaged by plague and by fire, repopulated and rebuilt almost over night. Of the Roman city which ended with the recall of the legions (412), there remain large fragments of wall, the names of gates, sundry relics of edifices. The Saxons and the Danes were not builders, but of Norman London there is yet that stately Tower, historically the most interesting spot in England, and at the other end of the city, Temple Church. The "great fire" of 1666 took what stood between; for what is there today Sir Christopher Wren is largely responsible.

### AN ARCHITECT'S OPPORTUNITY

Surely, to no architect ever came greater opportunity. This fire, of which our voluble friend Pepys gives such graphic account—"the churches, houses, and all on fire and a horrid noise the flames made; . . . it made me weep to see it"—licked up 13,000 houses and 89 churches, among them the ancient Cathedral of St. Paul. Wren drew the plans for their reconstruction; he and his pupils carried them to completion. In the general scheme none could have wrought better. The grouping of the city's parish churches about St. Paul's, the contrast of their delicate, graceful spires with the huge brooding dome, is perfect. For two thousand years a sanctuary of some sort crowned this low hill; for six hundred a huge and stately church, which, if old prints speak true, was lovely indeed to look upon—a Gothic church which fitted a northern city and northern sky as Italian St. Paul's does not.

As a hall of fame, however, the cathedral is appropriate. What a place of pilgrimage it must be today! Here England enshrines or commemorates her soldier and sailor sons; Nelson and Wellington head the list; also her great painters—Turner, Landseer, Leighton.

### MEANT FOR LARGER SPACES

Some of the monuments are good and more are bad—very bad. After suffering the many criticisms on America's poor taste in art one is sure to endure in the house of one's friend, it is a wicked satisfaction to lead one's tormentor into St. Paul's and halt casually before one of these atrocities. There is a moment of eloquent silence, then an explosive "Hum! let's have luncheon!"

St. Paul's from the river is delightful; it was meant for large spaces. By the maze of tiny streets about it, it is too crowded; but their names and associations are a never-ending pleasure—Paternoster Row, Ivy Lane, Amen Court, Bell Yard, Queen's Head—and between it and the Tower are many things at which a tourist should look. The monument on Fish Street Hill, for instance, commemorating the "great fire"—a fluted column whose height precisely equals its distance from the house of the King's baker in Pudding Lane, where the blaze began. Then there is the "London Stone," built in the wall of the Church of St. Swithin, an old Roman milestone, the milliarium of the Roman Forum, whence British highroads were measured. What a "modern" is Wren after all!

### IN LONDON TOWER

There is no question of our reverence for the Tower. I'm not sure that its museums have much interest for us, although we have plodded dutifully through them more than once, hoping for thrills. The Crown jewels left us quite indifferent; shop windows are so gay nowadays! And there was so much of the armor. The charm of the Tower is not what it possesses; it is what it is and has been.

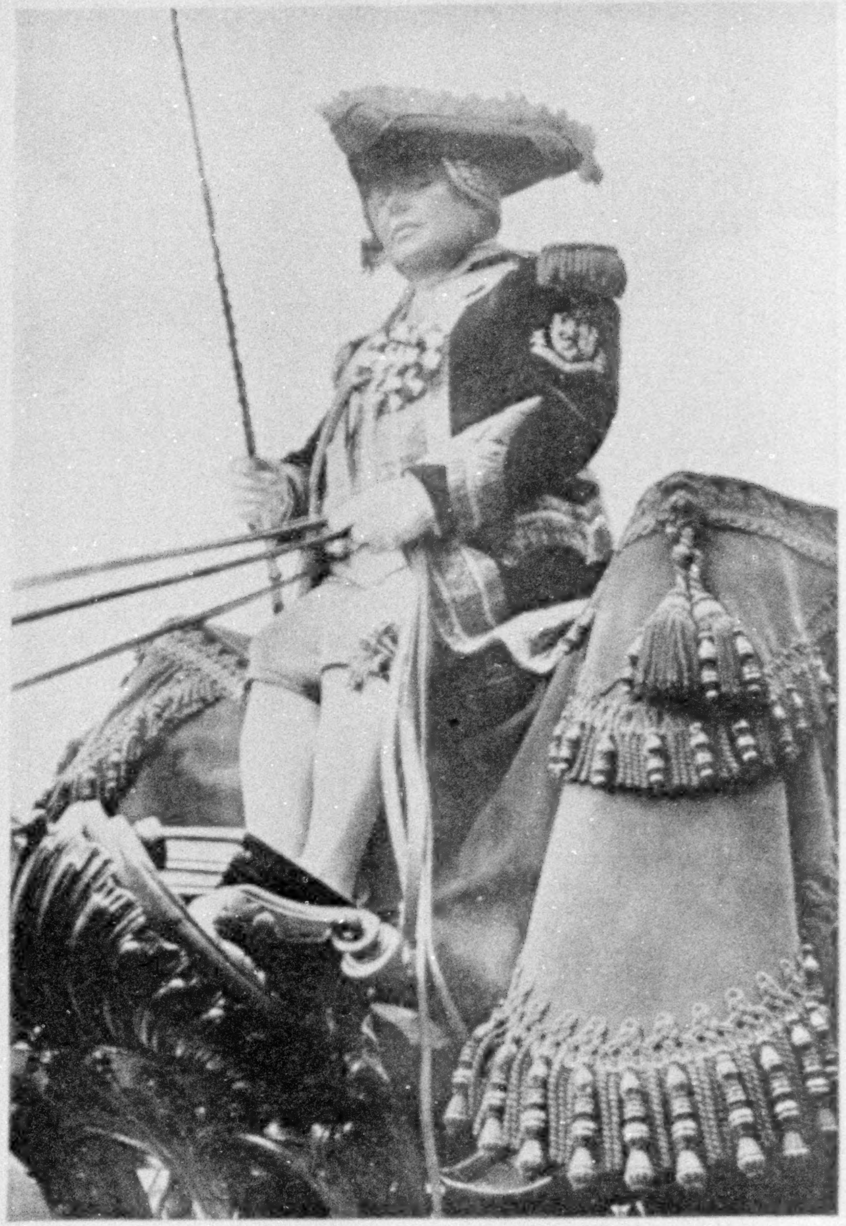
Certainly there was a fortress here in Roman times, on this little hill among the marshes by the river, and in Saxon days a great stronghold. But when William the Conqueror gave its first charter to the little city of London, "to William the Bishop and Gosfrith the Portreeve,"

XUM

Photo by F. J. Koch

A LONDON POLICEMAN

With an area equivalent to that of a strip of country a mile wide reaching from New York to Chicago, it is to be expected that Greater London has a larger police force than any other municipality in the world.



THE LORD MAYOR OF LONDON'S COACHMAN

It is a sight to see the Lord Mayor in his medieval splendor of velvet and fur and lace when he goes, on the 9th of November, to take the oath of office in his great golden chariot, all bobbing and quivering on its huge springs with the weight of his magnificence.

Photo by F. J. Koch

WHEN THE KING GOES ABROAD

When the King leaves his house on state occasions a double guard is drawn up—the interior guard made up of Royal Fusiliers and the outer of plain London "bobbies"

he evidently doubted its fidelity. He pulled down a bit of its eastern wall and even encroached upon its territory to make room for his great White Tower, the keep of the huge fortress, the most picturesque building in the Tower of today. London did not like it very well. Sentries on the Tower or wall could look right down upon the mean little wooden houses, the thatched roofs, the narrow, dirty streets of the Saxon town; could check the least uprising ere it had well begun. But what could London do but endure! If a threat, the Tower was also an inspiration. Under Norman rule, wooden London became stone London, a feat greatly aided by the fire of 1077, "a fire such as never was before since London was founded," which cleared the ground.

PALACE, PRISON, ARSENAL

The Tower — the whole fortress is called that, never "castle," for some reason unexplained—is today vastly different from that of the Normans. Then it was a royal residence as well as a stronghold; now it is a government arsenal and barracks. Its 13 acres are yet ringed with the double walls of the Normans, strengthened by many towers, and the moat, now all soft, sunny turf fit for tennis courts, could be flooded at need. There are several huge modern barracks in the enclosure, officers' quarters and guardhouse, the equipment of a fairly efficient fortress; but, unthinking of wars to come, we have always seen it with eyes turned toward the past. It is as a state prison that history knows it best; therein lies its greatest interest.

The White Tower has its name from nothing more poetic than whitewash spread upon it in 1240. It is 107 x 118 feet, 92 feet high, and its walls are 13 feet thick at their thinnest. Sir Christopher Wren "restored" it and altered four of its Norman windows to a "classical"

LUDGATE HILL
HAIR SPECIALISTS

Photo by F. J. Koch

A STUDENT: LONDON

London fogs and the smoke nuisance are not of recent origin. In 1806 the people petitioned Edward I to put an end to the smoke nuisance and he promptly made it a capital crime to use sea coal for domestic purposes. But London smoke still persists.

formula. One wishes he had not. It matters the less here, however; the interest is in people, not places. So much history has been made here, so much suffering endured, so much hope and happiness ended. Down to the time of Charles II the court frequently resided here—in a building now gone. Little children were born here; others died.

### THE FATEFUL WATER-GATE

It is not so much these who twist our heartstrings; it is those who came in state barges by the water-gate to leave no more. Doubtless some deserved their fate; not all were innocent and good; but the burden of their sorrow is upon us. Sir Thomas More, Anne Boleyn, Catharine Howard, Lord Somerset, Lady Jane Grey and her husband—all died either here or upon the scaffold on Tower Hill and are buried in the sad little church of St. Peter ad Vincula, within the walls—the saddest little church and graveyard possible, for here were buried not only youth and life and love, but faith and honor.

Sir Walter Raleigh was imprisoned here; the little sons of Edward IV were murdered here; the Duke of Clarence died in his butt of malmsey in one of these many towers. But others there were more fortunate, as Arabella Stuart and the Princess (afterward Queen) Elizabeth, who came out once more to life and freedom. And now, having made ourselves as cheerfully sad as possible, let us go out on the embankment, which now

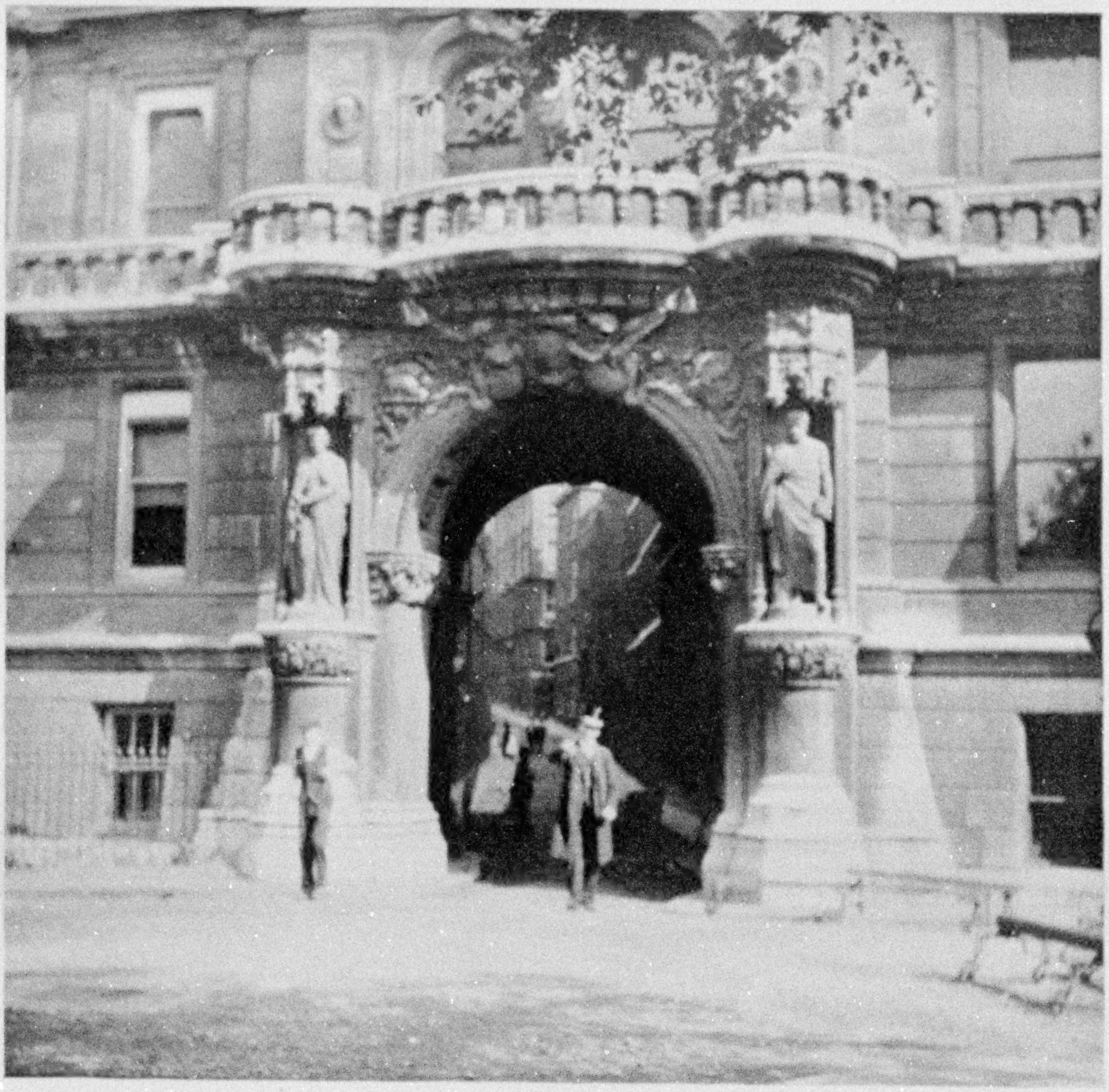


Photo by Emil P. Albrecht

THE GUARDIAN OF THE TEMPLE: LONDON

The uniformed gentleman is vociferously informing the photographer that he is a trespasser upon private property, the grounds of the Temple being open only to barristers and servitors of this inn of court, except upon such occasions as the Temple shall decree. The inns of court are societies for the study of law and possess exclusively the privilege of calling to the bar. There are four—the Inner and Middle Temple, Lincoln's Inn, and Gray's Inn. The Temple was formerly a lodge of the Knights Templar, became Crown property upon dissolution of the order in 1313, and after several changes came into the possession of the Knights of St. John, who leased it in 1346 to the students of common law. From that day the group of buildings between the Thames and Fleet street has been a law school.

lies between Tower and river, or, better yet, on the stately Tower Bridge, to look back upon the ancient pile. We may well spare the Beefeaters, the picturesquely attired warders, a passing glance; they and the Lord Mayor preserve for us medieval London. Serious-minded people derive their title from Buffetier—servers at the King's buffet—but the frivolous incline to the letter of the word; part of their wage was anciently paid in sirloins of beef. They are all old soldiers of meritorious service, these Beefeaters, and are very prominent in city processions and coronation festivities. For this service they receive medals, which they wear proudly.

### "I WAS 'ORRID 'OT"

Said a friend of mine to a very ancient Beefeater who had served at two coronations, "What do you think about when

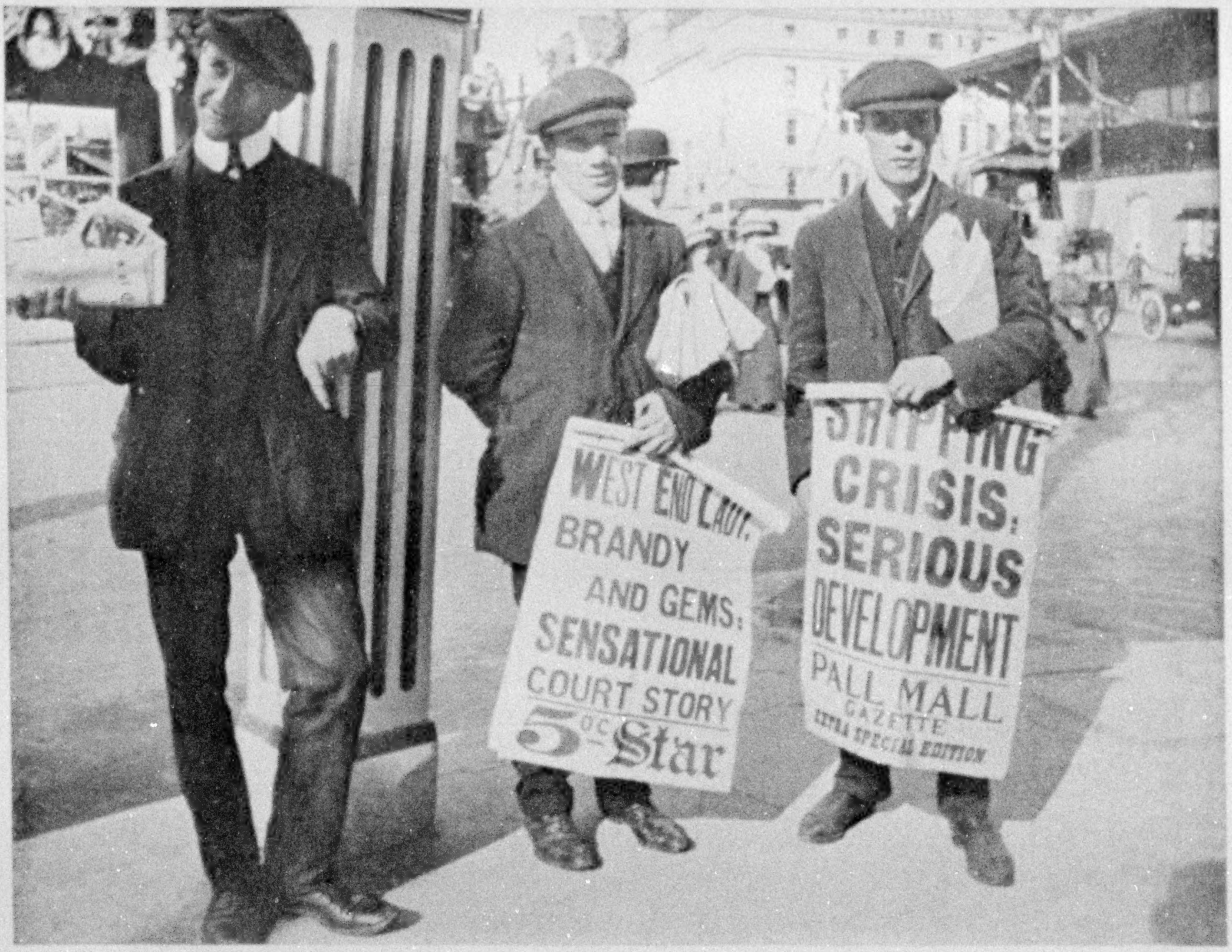


Photo by F. J. Koch

ADVERTISING TO THE EYE AND NOT TO THE EAR

Newsboys in London are not allowed to call their papers. They stand silently and advertise the contents of their papers by placards like these

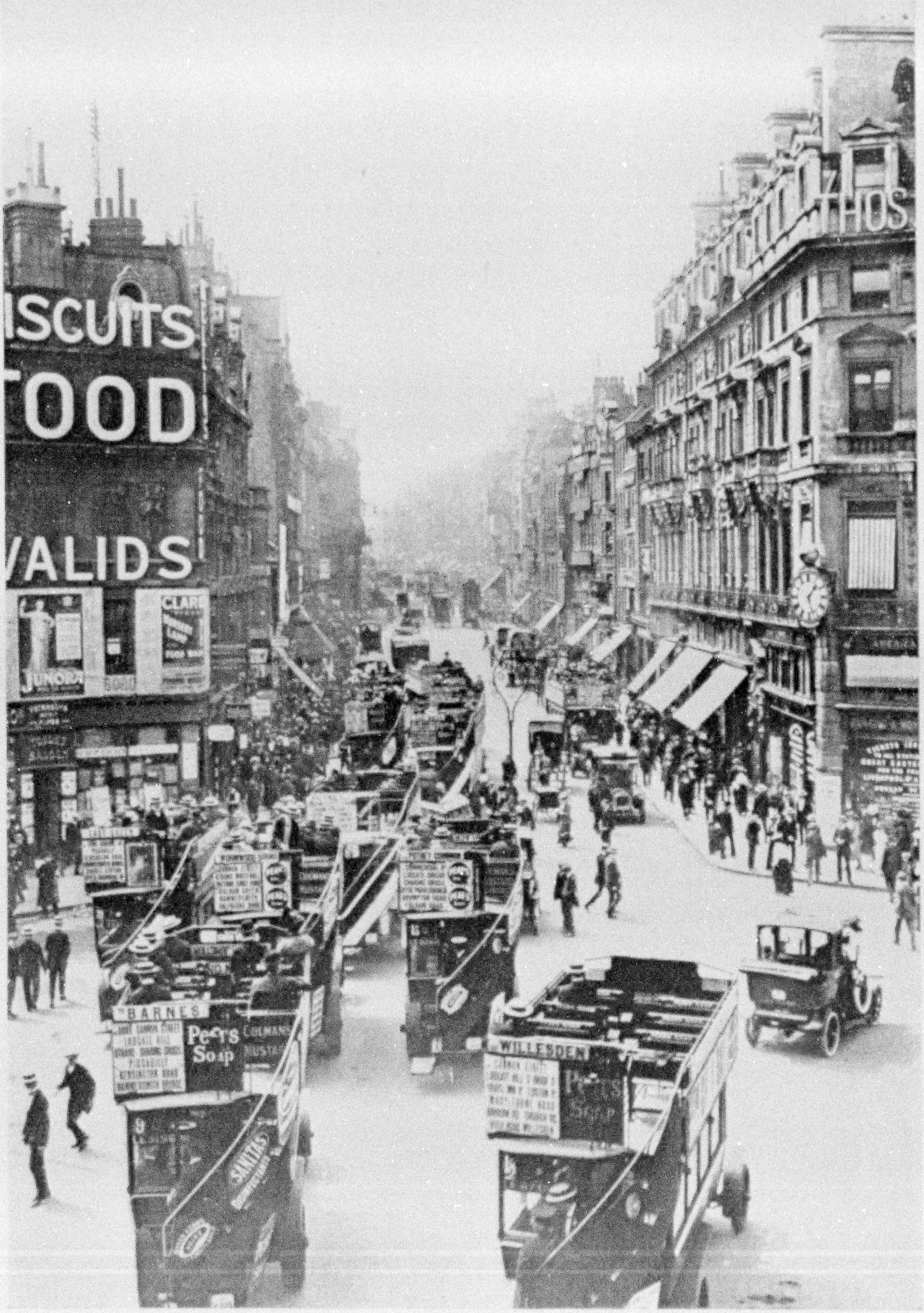
you walk in that fine procession? You must feel very proud indeed." The every-day garb of the Beefeaters is as comfortable as it is quaint, but the dress uniform is very Elizabethan in picturesque discomfort. "Proud is it? Proud? Not I! What I thinked of when the King was a-crowning was that I was 'orrid 'ot, and the blawsted ruff made my whiskers tickle my nose till I was like to sneeze."

Now, after we have looked our fill at the old White Tower, have pondered long the full meaning of Traitor's Gate, let us take boat—they are not especially fine boats, and on holidays are apt to be crowded, but we shall go on a Monday and make the best of them — to that stately hall at Westminster which supplements this Tower. It is hard indeed to turn our back upon the port—such a port—and there will be much temptation to disembark by the way. Not at Billingsgate, certainly, redolent of fish and language too forcible to be fine; nor, indeed, anywhere in the city until we come to the Temple, at its farther end.

### KNIGHTS TEMPLARS' HOME

Here, in a pleasant place beside the city, its gates opening upon the river road that connected St. Paul's with Westminster (Fleet street and the Strand), whose flowery gardens dipped down softly to the sedgy river, the powerful order of Knights Templar—"poor soldiers of the Temple of Solomon"—made their home. After the suppression of the order, in 1313, the property passed to the Crown and ultimately to the Knights of St. John, who leased it to the "students of the common law," in whose hands it remains to this day.

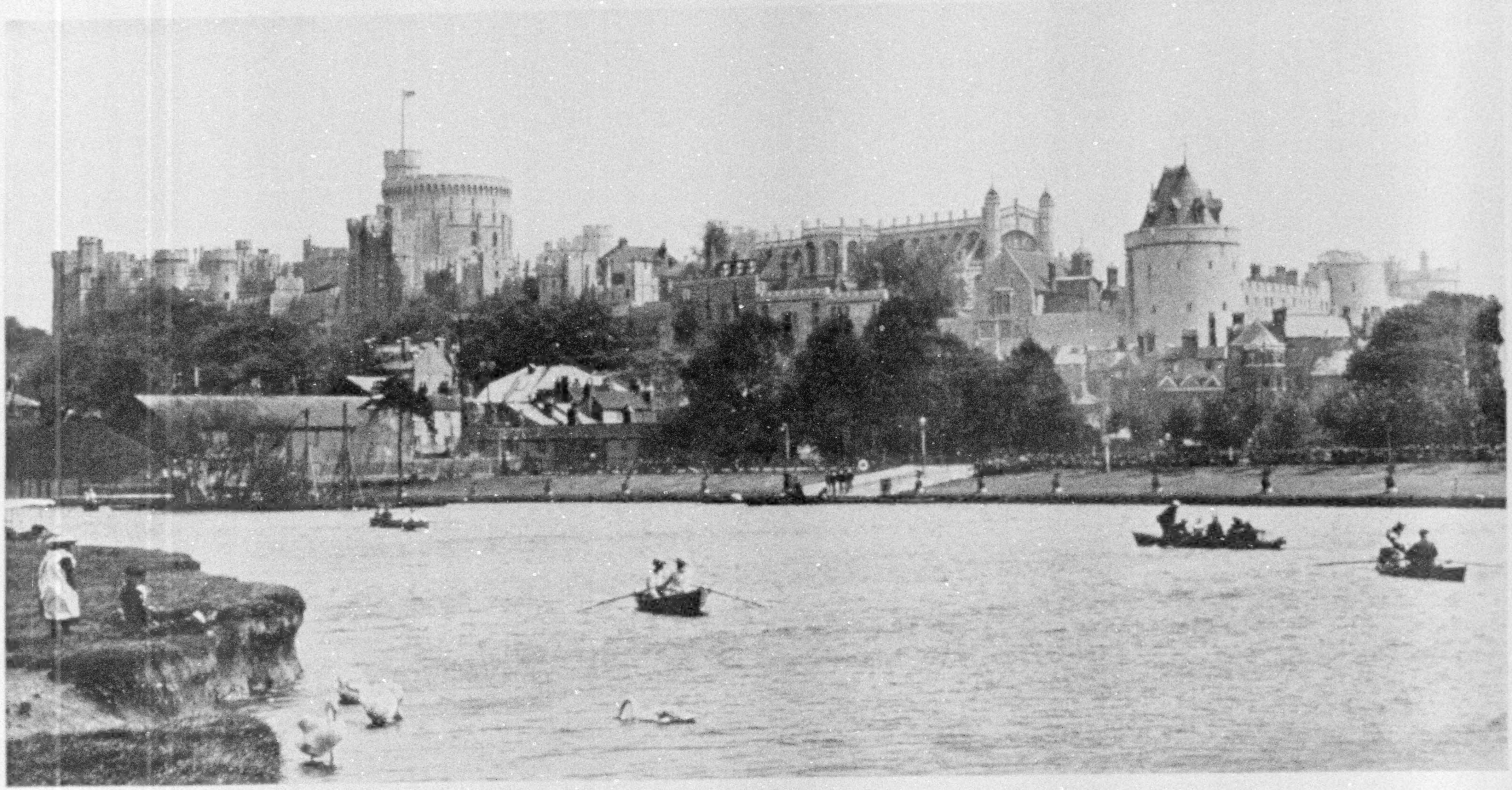
Of the ancient buildings only the round Norman church of 1185 remains, one of the few in England. In it peaceful mar-


ISCUITS
FOOD
VALIDS
THOS
BARNES
Pears Soap
COLMANS MUSTARD
WILLESDEN
Pears Soap

FLEET STREET (FROM LUDGATE CIRCUS): LONDON

The street is famed for its newspaper offices. It is one of the busiest thoroughfares in the world. When the reigning sovereign visits the city on state occasions, he never fails to observe the ancient custom of obtaining from the Lord Mayor permission to pass Temple Bar.

XUM



WINDSOR CASTLE, COUNTRY HOUSE OF THE KING

Windsor Castle is situated about twenty-five miles outside of the heart of London and is one of the finest royal residences in the world. The restoration, completed under Queen Victoria, cost $4,500,000. The city residence of the King is Buckingham Palace. The stables of the latter place house forty different turnouts for the royal family.

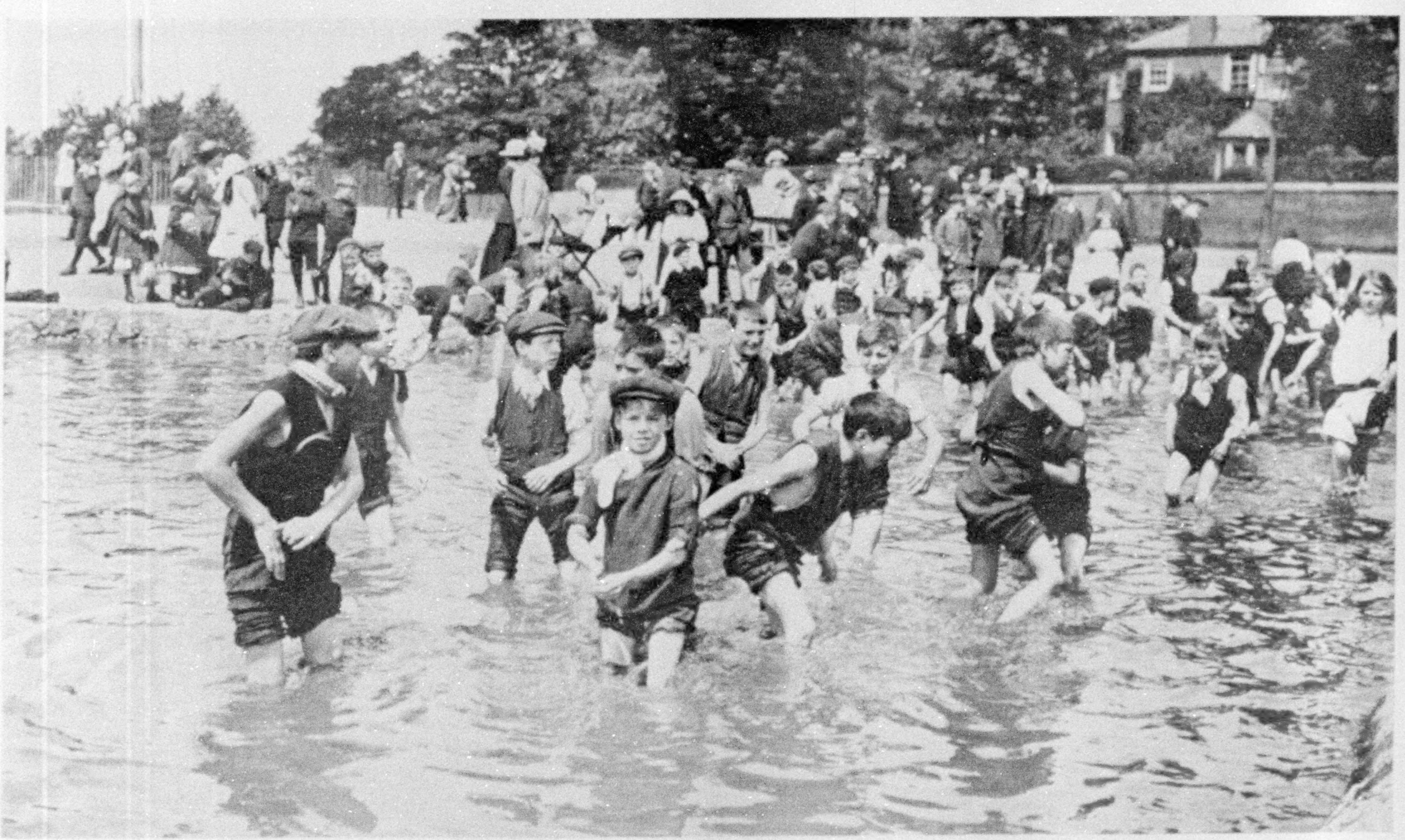


Photo by A. W. Cutler

TYPICAL SCENE AT A WAYSIDE POND ON SPANIARD'S ROAD, WHICH ADJOINS HAMPSTEAD HEATH, ON A HOLIDAY

The pond is only knee-deep, and all day long the boys scramble for pennies thrown in by good-natured bystanders

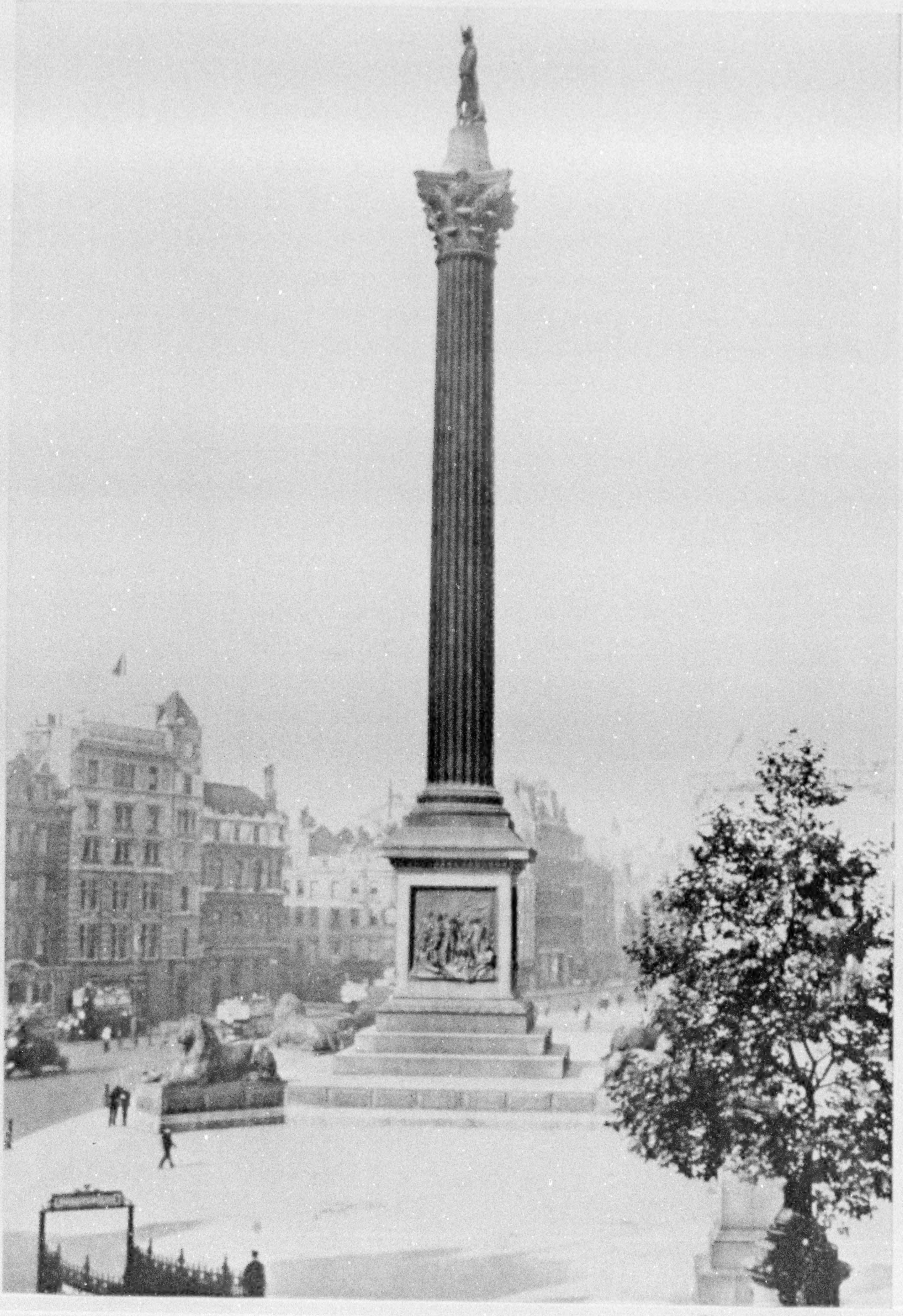


Photo by Emil P. Albrecht

TRAFALGAR SQUARE AND NELSON MONUMENT

This monument, a massive granite column 145 feet high, commemorates Lord Nelson's death at the Battle of Trafalgar, October 22, 1805, where the English fleet gained its great victory over the combined armaments of France and Spain. By this victory England's position as mistress of the seas was firmly established. It frustrated the purpose of Napoleon—who had at Boulogne an army of 172,000 infantry, 9,000 cavalry, and 2,413 transports—to invade England. The column is a copy of one of those in the Temple of Mars Ultor, at Rome, and is crowned with a statue of Nelson 17 feet high.

Photo by Emil P. Albrecht

ONE OF THE LIONS GUARDING THE NELSON MONUMENT: TRAFALGAR SQUARE, LONDON

London annually spends more money than Greece; its parks cover more territory than Dallas, Texas; its insane population is greater than the total population of Charleston, West Virginia; the paupers provided for every day are greater in number than the total population of Duluth, Minnesota; its children of school age exceed the combined populations of St. Louis and St. Paul; its army of school teachers is one-fifth as large as the standing army of the United States.

ble knights have slept these seven centuries with other revered dust that once bore well-known names.

Anciently, men in holy orders were sole practicers of English law, but somewhere about 1200 the clergy were restrained from acting in any but ecclesiastical courts. There resulted some awkwardness, and, a century later, we find the establishment of schools of common law in inns near to the courts of law at Westminster, to which "eager and apt" students from the provinces might be brought. In these inns of court and of chancery, corresponding to our colleges, the "earliest settled places for students of law," not only law and divinity were studied, but "dancing, singing, and instrumental music; so that these hostels, being nurseries or seminaries ot court, were therefore called inns of court" (Fortescue).

### WHERE BARRISTERS BEGIN

The inns of court exist, with small modifications, as they did six centuries ago. There is no priority among the four, and in all matters of common interest their benchers (masters of the bench, governors) meet jointly; but Middle Temple and Lincoln's Inn, Inner Temple and Gray's Inn, are felt to have closer alliance.

An inn of court consists of benchers, barristers, and students. The benchers are senior, usually distinguished members of the society and its governors. They may be twenty, as at Gray's Inn, or seventy, as in the Inner Temple. Their chief duties are the admission of candi-

XUM

Photo by F. J. Koch

SAILORS IN LONDON: LONDON IS ONE OF THE LARGEST PORTS OF ALL BRITAIN

dates and the calling to the bar of students, but they have practically unlimited powers in all that concerns the management of the inn.

Once called to the bar, by the payment of an annual fee of £1 to £5 or of a fixed sum upon admission, a barrister remains a member of his inn for life. He may resign, but if he does so loses all membership at the bar. The fees for a student vary, but a barrister's legal education will cost from £400 to £500 and take about three years—twelve terms. Solicitors who have been in active practice for at least five years may be called upon shorter terms.

### WITNESSING HIS OWN PLAY

The dancing and singing lessons bore their fruits in the masques, revels, and plays given by the members of these inns of court in their halls or gardens. Thus at Gray's Inn, Shakespeare's Comedy of Errors had its first performance in 1594, and later a Masque of the Flowers, which was revived for the Queen's Jubilee, 1887. Twelfth Night was acted, possibly before Shakespeare himself, in the great Middle Temple Hall, which we can see from the river. All of the inns have pretty gardens. That of Lincoln's Inn was a famous duelling ground, and is now a great public square surrounded by houses bearing resonant names and, appropriately, the Royal College of Surgeons. It is best reached by a gateway in Chancery Lane—a gateway at which Ben Jonson was said to have labored, a trowel in one hand, a book in the other; but the pretty story has been squashed.

The Temple garden opens now and then at the will of the benchers.

### WHEN THE BRITISH LION ROARED

Merrily I marched in one day in the years of my ignorance. "Hi, hi!" called a uniformed gentleman, but I kept on confidently, with not the least notion that I was Hi! However, he soon made it plain to me. Also that I was a trespasser upon private property; that the benchers were very pleasant gentlemen, who did open the gardens occasionally; that I should wait for their pleasure in that; that an application to the honorable secretary, etc.—in all of which time my companion industriously took pictures. When my persecutor was breathless, I mildly explained that I was going away the next day, 3,000 miles away, and could not wait for benchers. Whereupon—as for us has always been the case—the British lion roared his loudest to scare us, and, having reduced us to proper

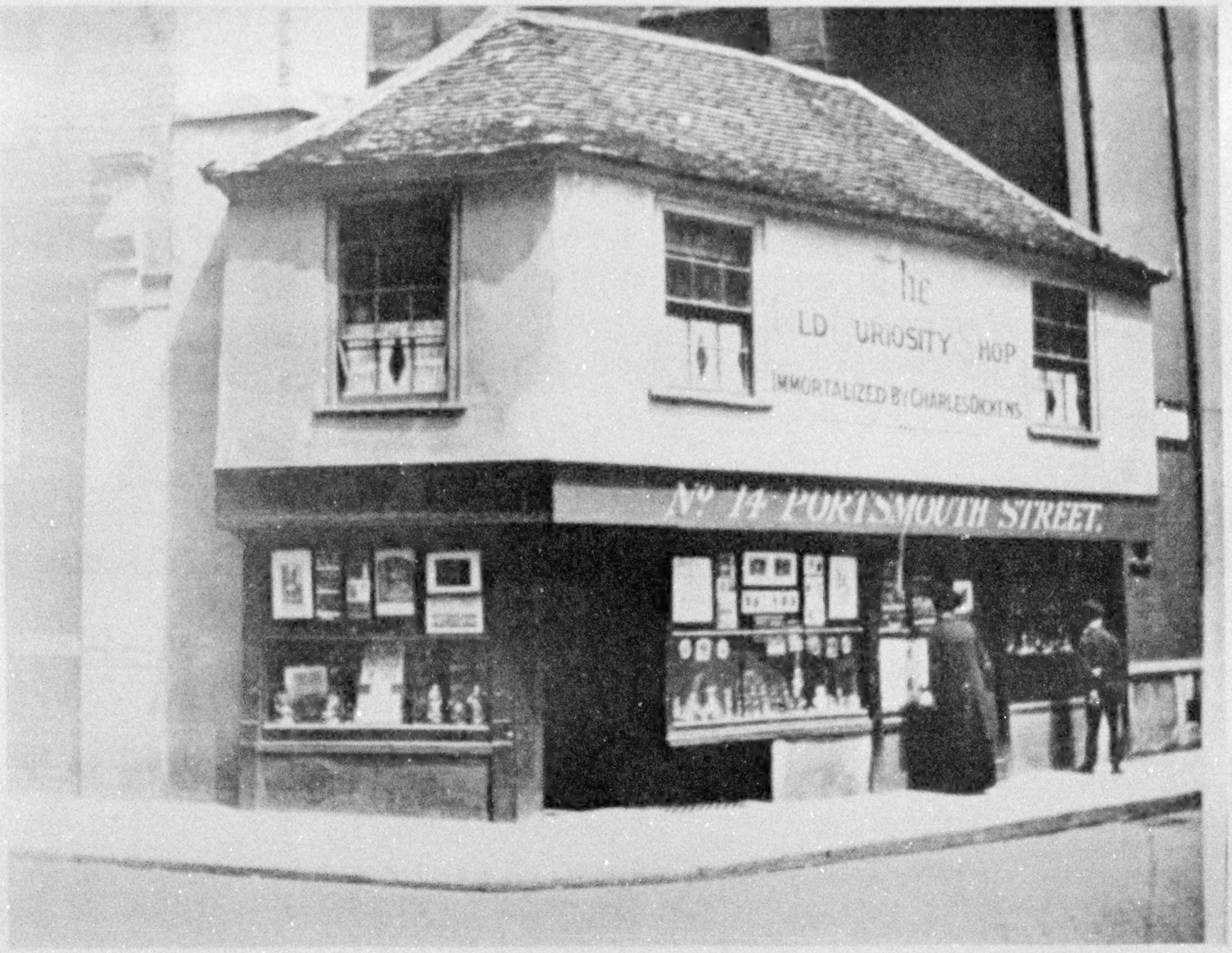


Photo by F. J. Koch

OLD CURIOSITY SHOP: LONDON'S MOST FAMOUS LITERARY SHRINE

meekness, benignly purred; the gates were thrown open wide and we were bidden to enter.

The embankment parts the garden from the river today. The roses no longer tiptoe down to dip their dainty feet in the Thames, as perhaps they did when Plantagenet and Somerset plucked there those blossoms, white and red, that named a war.

> Plantagenet:
> If he suffer that I have pleaded truth,
> From off this brier pluck a white rose with me.
>
> Somerset:
> Let him that is no coward, nor no flatterer,
> But dare maintain the party of the truth,
> Pluck a red rose from off this thorn with me.—(*Henry VI.*)

In the great, beautiful hall (1572) there, Shakespeare saw his plays, Queen Elizabeth dined, and, upon a table made from the wood of the Spanish Armada, signed the death warrant of Mary, Queen of Scots.

Let us go now up the river past Somerset House, on the site of a palace of that name begun in 1549 by the great protector, and the home of many queens. The present huge building, the "house of many windows" (3,600), houses many public offices—audit, inland revenue, probate registry, wills—and in a wing, King's College, a school of London University.

Let us go on past the Savoy Hotel, where, from 1245, stood the palace of Peter, Count of Savoy, uncle of Eleanor of Provence, who was the wife of Henry III and the mother of Edward I. King John of France died here in 1364; Chaucer was married in its chapel; John of Gaunt dwelt here for a space; Cromwell used it for conferences. There is left of it today but a chapel (1505) and the name. Is not that enough to hold us for a while, waiting for court barges and fair ladies that come, alas, no more?

Soon we come to Charing Cross bridge, where indeed we must alight. We have passed under four bridges since we left

XUM

Photo by A. W. Cutler

THE GIRAFFE AT THE LONDON ZOO HAS A FEW THINGS TO SAY TO HIS ADMIRERS

the Tower—London, Southwark, Blackfriars, and Waterloo—and if the time was close to sunset we must have loitered at the latter a quarter hour. Then, when the level light is brightening St. Paul's huge dome, swelling high above the dusky city; when the fairy spires of St. Bride, St. Clement, St. Mary are flushing to rose against a darkening sky; when the trees on the embankment stand like a great grill, pale gold on the summit, almost black in the shadows, before the stately buildings which reach into light behind them; when the river ripples softly on its silvery path to the sea and all the little boats scurry madly over its gleaming surface, their white wakes whiter, their black smoke blacker for its brightness; when the whole scene swims in palpitating misty light—violet and rose and amber; then truly there is nothing in Venice more suggestive or more fair.

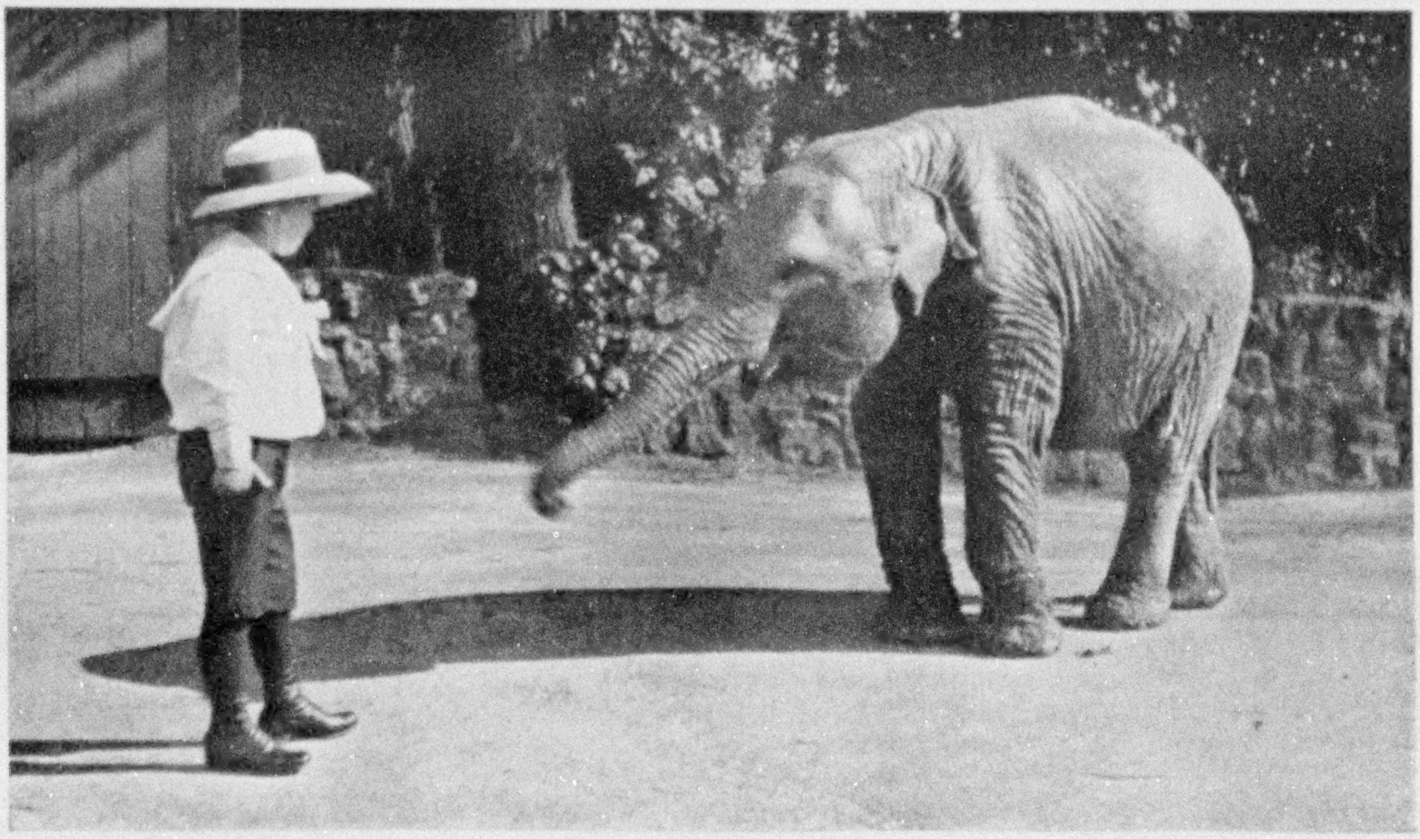


Photo by A. W. Cutler

AT THE LONDON ZOO

Baby Elephant: "Hurry up, kid, if you've got anything for me!"

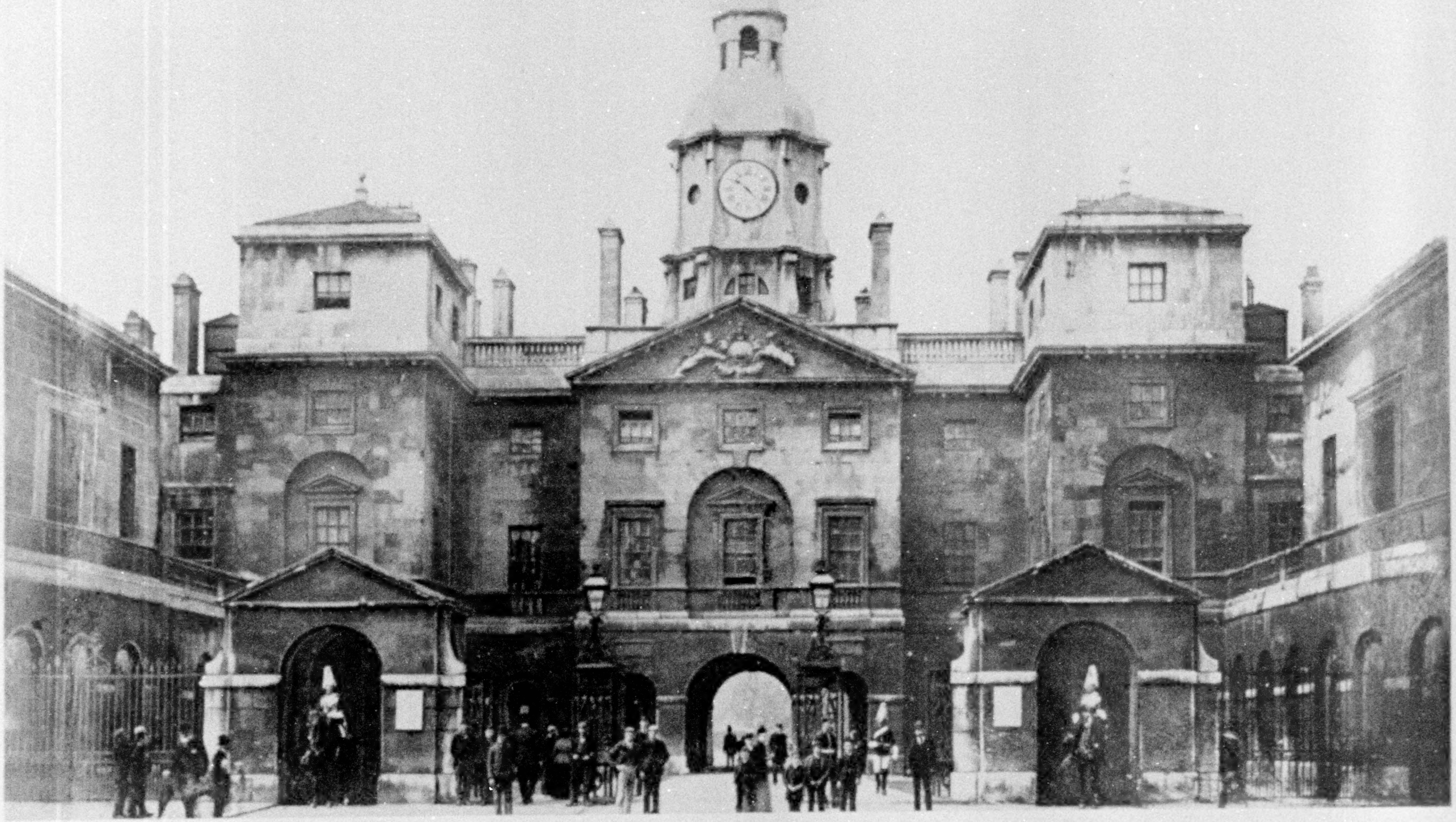
But if it be a morning hour, we leave the boat at Charing Cross and go a-foot to Westminster, not by the embankment, but by Northumberland avenue and Whitehall. We will come thereby to Trafalgar Square, the official center, the tourist heart of London, and perhaps glimpse the beautiful cross in Charing Cross Station yard—that is, if taxis, motors, hansoms, paper "boys" and flower "girls" of all ages will let you think and see. The cross is but a replica, but it does credit "to the sweetest thought King ever had" and to a nation.

### A KING'S SWEETEST THOUGHT

When, in 1290, Eleanor of Castile, wife of the first Edward, died at Harby, the long, slow funeral train started for Westminster. At each place where her bier rested for the night Edward raised a cross, and this, the stateliest of them all, stood here from 1291; the restoration is of our own time. Just why the bearers halted here within a half mile of the Abbey, when they had already tarried a night in the city, we can only surmise. There was an especially revered chapel here, and thence a stately entry could be made to the precincts of palaces and abbey; is that it? It has been a popular and pretty custom to derive Charing from chère reine, Edward's "dear queen;" but, like all prettinesses, historians will have none of it, claiming a village of Charing (Sax., Cerring) here between London and Westminster long before her time. But so Eleanor came to the Abbey and her beautiful tomb there, where she slept, let us hope, content, knowing herself remembered.

And now we may turn into Whitehall, the broad street named for an ancient palace where the business of the British Empire is administered—a very busy, very grave, street today, carrying the weight of war. The Admiralty, the Horse Guards, the Treasury, Downing street, the foreign and colonial offices are upon one side; great Scotland Yard, the War Offices, the "Banqueting Hall," sole relic of the Palace of Whitehall, on the other, and beyond, reached by Derby street, new Scotland Yard, headquarters of the Metropolitan police.

The Admiralty dates from 1722, but the larger part is quite modern; the War Offices are entirely so. The Government Offices, beyond the Treasury, are of 1868-1908, the Treasury of the time of George I. Here is the office of the Prime Minister (First Lord of the Treasury), and



THE HORSE GUARDS: WHITEHALL, LONDON

Great public interest is displayed in watching the Horse Guards on sentry duty outside the building. These soldiers wear a very handsome and picturesque uniform and are the tallest men in the British army in Downing street, alongside a rather dingy dwelling—No. 10—is his "official residence," since 1731. No. 11 appertains to the Chancellor of the Exchequer.

### WHERE WOLSEY LIVED

It was at Whitehall that Wolsey gave his sumptuous entertainments; here that he was publicly disgraced; here that Henry VIII first saw and coveted Anne Boleyn; here that he died. From Whitehall Elizabeth was borne by barge to the Traitor's Gate that she scorned to enter; here she returned out of captivity a triumphant queen; here Oliver Cromwell dwelt with his secretary, John Milton, and here he died; here Charles II lived recklessly and died nonchalantly. To it, from St. James Palace and his last night on earth, came Charles I, walking briskly across St. James Park, which was then the palace garden, and passed out through a window, marked today, to the scaffold where he would give his own signal to the executioner, "When I stretch my hands so—then—" Yes—Whitehall has long and heavy memories.

It was a huge place once. With its gardens it reached from Charing Cross to Westminster, from the Thames over St. James Park; but civil war and fire did their work; there is nothing of all its splendor but this hall of 1620. Let us pass on, then, to Westminster, which beckons in the mist; not the black fog of November that shuts out all things as with a curtain, but the soft, white, silky mist that smoothes rough edges, blends rude colors, makes prosaic things poetic and lovely ones sublime. And having come there, what shall one say? There is too much of beauty, of memory, of life and love and pain, too much of suggestion for one calmly to bear.

### THE WESTMINSTER GROUP

Let us go across the river and look upon it all safely. The great Abbey Church is hidden now, so we can look the more critically; for the Houses of Parliament (the Palace of Westminster) are new—very new—for England, and do not oppress us with our own youthfulness. No one will question that they are beautiful. They spring from the river bank like delicate grasses, with here and there a stately, overtopping flower. It may be quite true that they are too elegant, too ethereal in their perpendicular gothic for appropriateness; that lawmakers of empire should have a sturdier, graver housing; it may be that if the Victoria Tower is correct, St. Stephen's is too slender; it may be that the river façade is overadorned; the statues of England's kings and queens wasted there. It may be all these things and more; I have no fault to find. The early morning light bathes the great whole in softest radiance; every pinnacle and tower gleams and laughs in sky and river; against the evening's glow they lie dusky violet, and the water ripples silvery past their feet.

Within they are as rich as without, but interest for us centers in that great Norman Hall, which we think the finest in the world. As early as the days of Canute there was a palace here, but it was William Rufus who, in 1097, began this hall, and a palace that was the residence of kings to the time of Henry VIII. The hall has served as House of Parliament, as a banqueting hall, as a court of justice; it has seen the making of much of England's history and the undoing of her kings. Coronation banquets were held here; captive kings were entertained here; knights bearing the King's challenge rode full armored into the hall; Charles I was here condemned to death, as were also William Wallace, champion of Scotch liberty, Sir Thomas More, Guy Fawkes, and many another; here Warren Hastings suffered his long and famous trial of seven years. Today the hall serves merely as a great vestibule to the House of Commons.

### A SUPERB HALL

It is a superb place, 290 feet long, 68 feet wide, 92 feet to the oaken roof, which is quite unsupported by columns, a great clear, free space, mounting by some fine steps at the south end to the great window of St. Stephen's porch.

Outside this great hall one day we heard—or thought we did—the British Lion's growl. There is a dear jolly laughing lion by St. Stephen's porch, but it was not he; he is an old friend; we exchange grins whenever we go to salute Richard Cœur de Lion on his charger. We were sauntering along Old Palace Yard, looking back at Richard and forward at the Victoria Tower, being photographically inclined, and halted to study the "finder." Out of nowhere appeared a "bobby" and jogged the photographer's elbow. "Beg pardon, ma'am, but you cahnt take that here, ma'am!" Visions of Scotland Yard and the Tower floated before my eyes. I gasped. It was a hot day anyway. "Go back there by that tree, ma'am, and you'll get it nicely, ma'am. I've got a box myself." Only a fellow-photographer after all!

### WESTMINSTER ABBEY—THE HEART OF LONDON

The Victoria Tower rises above the King's entrance to the House of Lords. St. Stephen's Tower, at the other end of the long building (from St. Stephen's chapel), is the clock tower, the home of "Big Ben," the largest bell (13½ tons) in London except "Great Paul" (16 tons), which is the largest in England, in the cathedral tower. But "Big Ben's" smooth voice is heard all over London, and with its soft full pealing we come to the Abbey, which is, not geographically, but sentimentally, the core of London, the heart of her heart. We think of it less, in spite of its many and regular services, as a church than as a nation's walhalla, the shrine of her noblest and best, as the stage for stately ceremonial, as the reliquary which preserves history and poetry and art. Yet it is as a church that she endures through the centuries. The monuments that we revere and deplore are excrescences belonging neither to her service nor her adornment. They bring little to her; she gives much to them. Yet stripped of them all, though she would be the lovelier, she would be the poorer. She is today many things beside "that altar to the most high God and to the honor of His martyr, Saint Peter," with which she began.

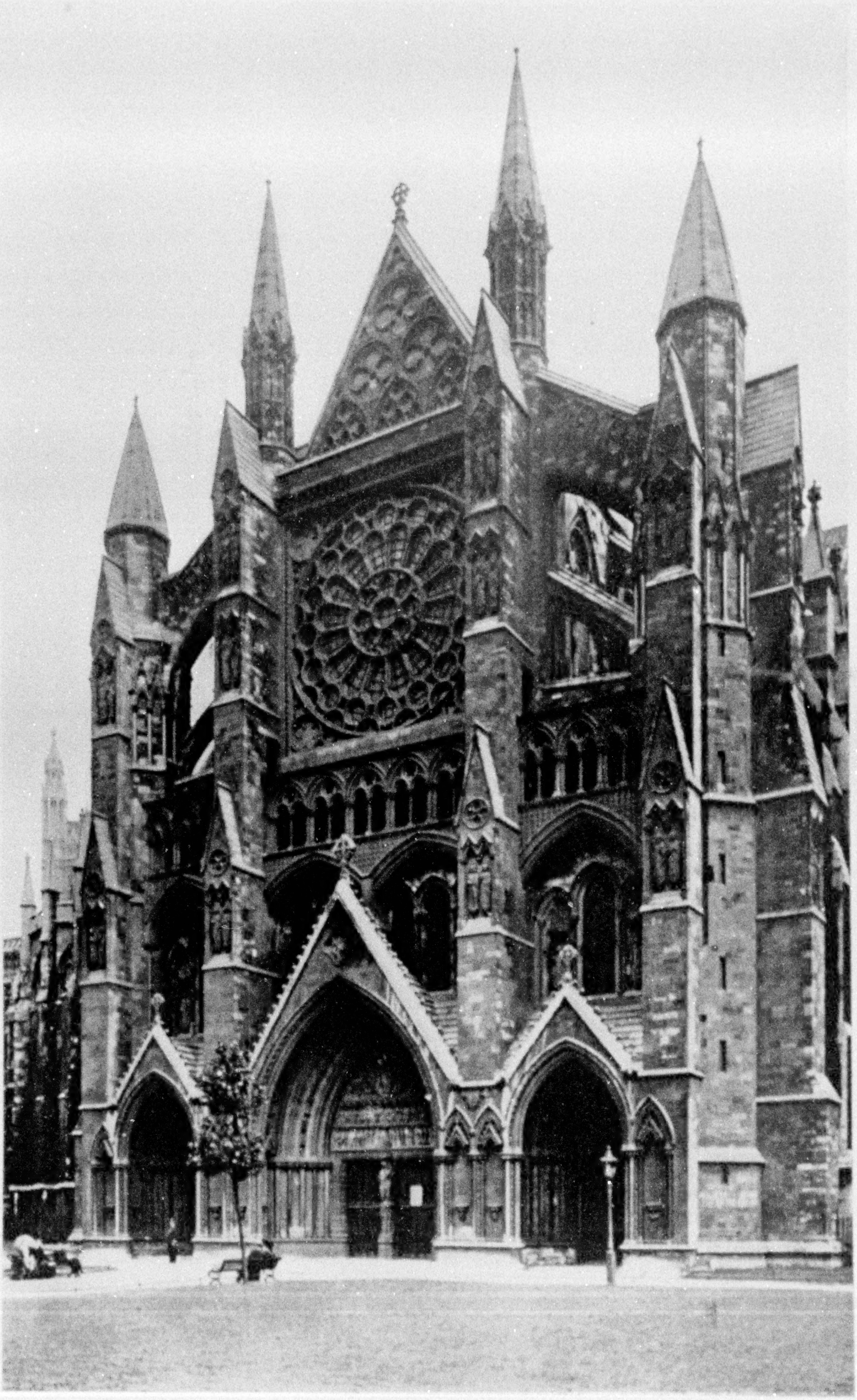
Somewhere about 616, upon Thorney or Bramble Isle, a small marshy islet by the Thames, overgrown with thorns, surrounded by oozy water, a Saxon king built a church and monasterium, and as there was a Cistercian abbey or minster to the east of the city beyond the Tower, where the Royal Mint stands today, this became the minster of the west. It was a small affair apparently, although a splendid legend sends St. Peter to its consecration; but with Edward the Confessor (1049-'65) begins the history of the present great church, which was erected upon the site of Edward's in the latter half of the thirteenth century, practically as it is today. The superb chapel at the east end was built by Henry VII (1502-'20); there is nothing of its kind (a florid perpendicular) lovelier.

The interior of the abbey is doubtless open to criticism. The monuments are too many and often ugly; the choir is too long, usurping part of the nave; the screen is ugly; there are incongruities. And yet, though one fears to move in the duskiness for fear of treading upon sacred dust, one's eyes stray upward and away to the lofty, pointed arches, to the great perspective of nave and choir and transept; to the many chapels circling adoringly about the sanctuary, as they so often do in France, but rarely in England; and one hears in the stillness the hushed tread of processions, breathes the acrid odor of incense, senses the faraway chanting that repeats England's joy and sorrow, England's story through almost a thousand years. Here her Kings were crowned and here they were buried; here the people came to do homage and reverence. The day after its consecration Edward the Confessor died and was buried in his church. The Normans, grateful to him who bequeathed to them a throne, made it a place of pilgrimage, living, and followed him here, dead. That fixed the rule. The old Coronation Chair, made for Edward I, contains the Stone of Scone, emblem of Scotch power, which this Edward broke, claiming to be the true "pillow of Jacob." Some thirty kings have sat there to receive a royal diadem.

### A PROCESSION OF KINGS

Norman, Plantagenet, Lancaster, York and Tudor, Stuart, Hanoverian, each in his turn; some gladly, some reluctantly, fearing an uneasy crown. A few swift years and then they come again to leave no more, to mingle, through slow centuries, their dust with those who, before and after them, sit here in state. And with them many others, maid and wife, child and parent, poet, historian, soldier, statesman, known and unknown to fame.

It will not do to leave London without



WESTMINSTER ABBEY (NORTH PORCH AND WINDOW): LONDON

London is famed for its churches, of which Westminster Abbey and St. Paul's are the most famous. Fifteen hundred of them, representing almost every denomination and sect, tell of London's religious aspirations.

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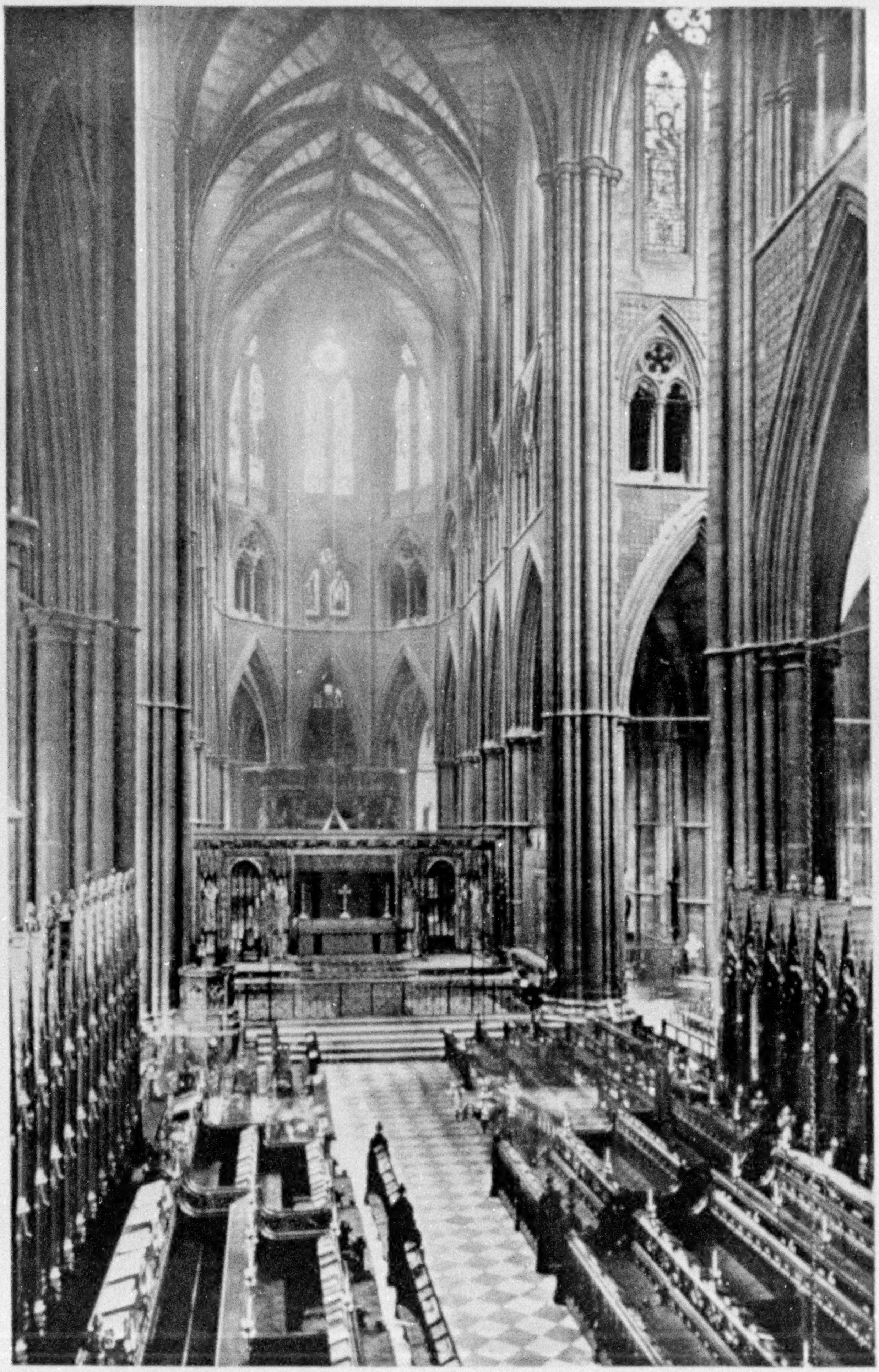
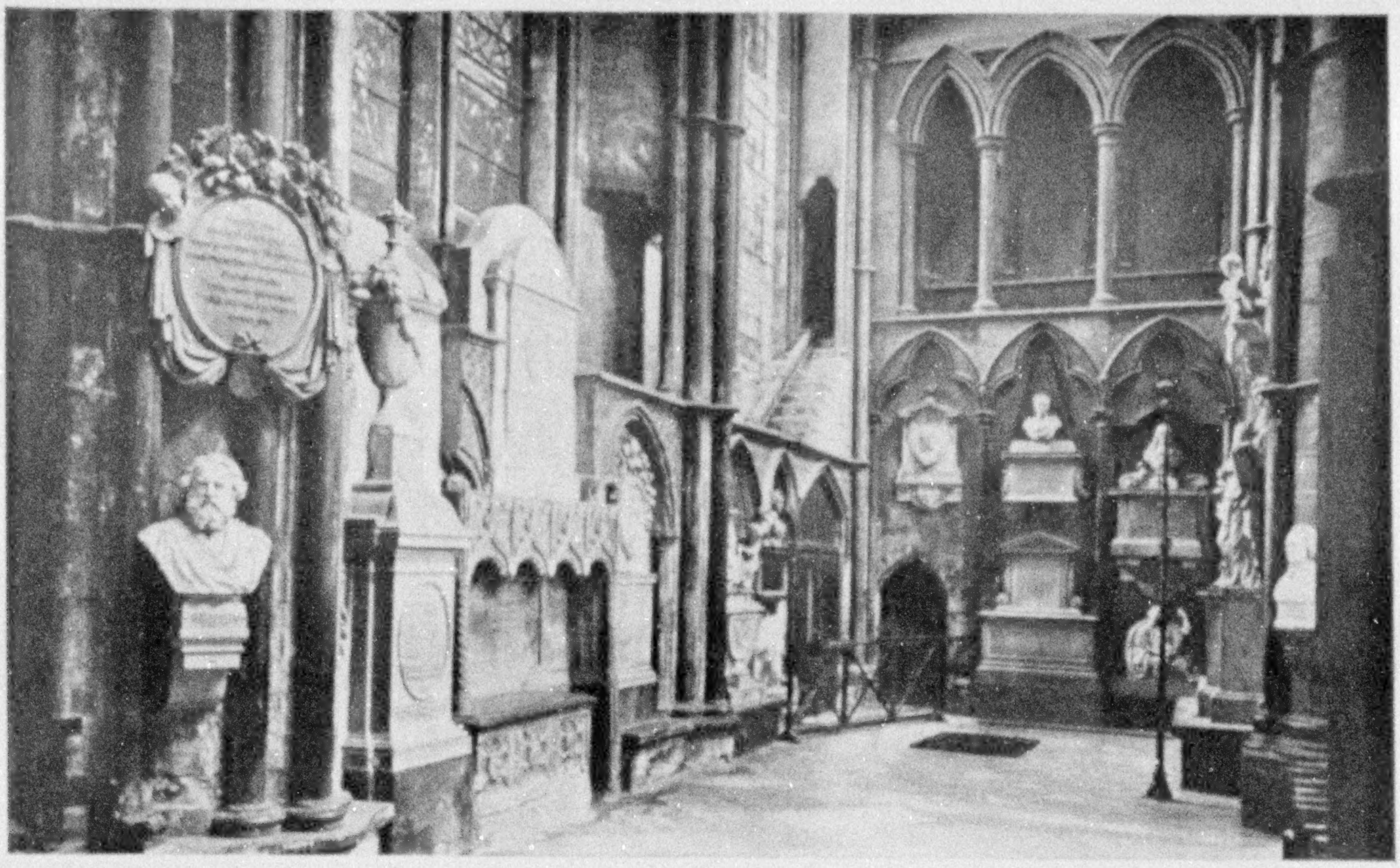


WESTMINSTER ABBEY (THE NAVE, CHOIR, AND EAST WINDOW)

"One hears in the stillness the hushed tread of processions, breathes the acrid odor of incense, senses the far-away chanting that repeats England's joy and sorrow—England's story through a thousand years" (see text, page 286).



POETS' CORNER: WESTMINSTER ABBEY, LONDON

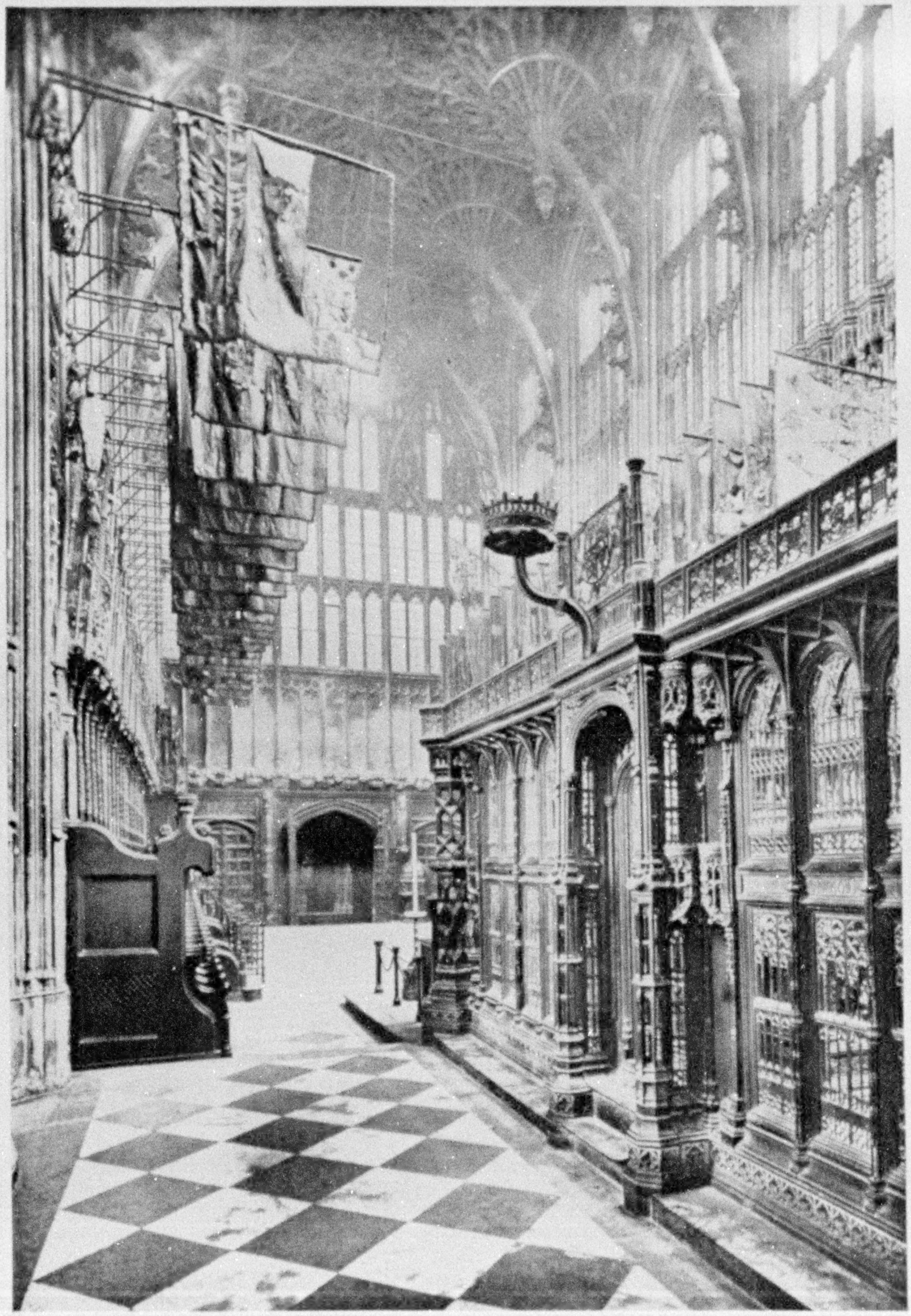
This is situated in the south transept and contains memorials of England's greatest writers and poets from Chaucer onward. The bust on the left is of Longfellow. James Russell Lowell's contributions to literature are memorialized by a stained-glass window in the Chapter House.

seeing its parks. When my brother, a little lad of seven or eight years, came home from his first London visit, small sister asked: "What did you like best?" In a tone of unalterable, unassailable conviction came the answer: "The Zoo!" Like an Irish friend, he cared more for living than dead lions. After a very satisfying visit to Westminster Abbey, I foolishly asked this friend what he thought of it. "Sure," said he; "it reminds me of a graveyard taken in out of the rain."

### WHERE FREE SPEECH IS NO EMPTY FIGURE

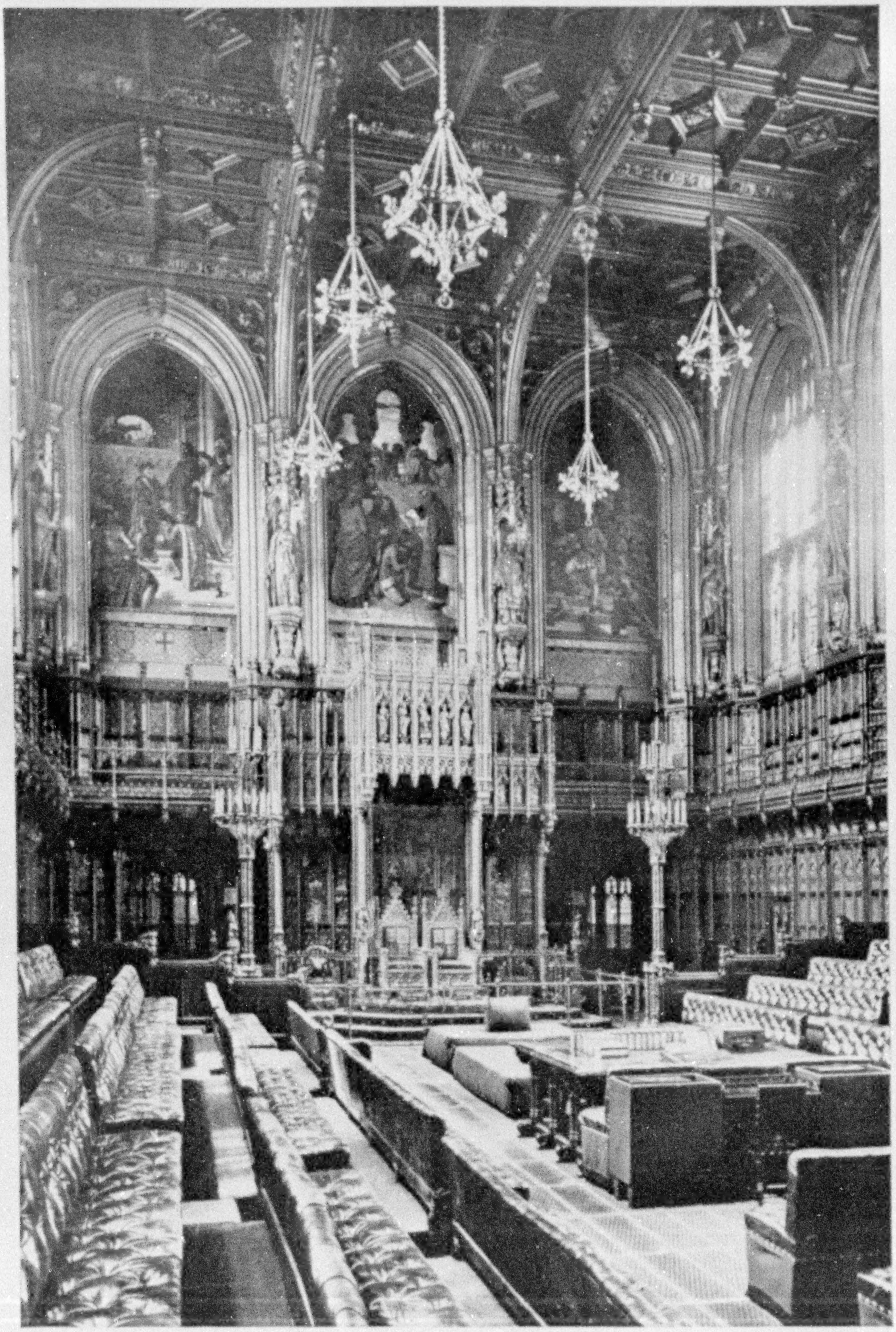
Hyde Park, as I remember it, was a place of demagogues and loud-voiced oratory; yet that is manifestly unfair. The brightest and best of England's youth and age ride in Rotten Row (Route du Roi) of a summer morning; drive beside the Serpentine of an afternoon; but almost every Sunday in the year and some days in between hoarse promoters of new labor laws or new religions hold forth just inside the gate to floating audiences, which shift and drift impartially from one speaker to another. To know the park one should see it at both times, and, unless too middle-aged, should join at least once the group of very young and quite old, who sail toy boats on its pretty waters. But to play one ought to go on into Kensington Gardens, and who dares now write of that after Peter Pan? I have looked for him often there—I know the places—but it is too late. I am too old or not old enough.

St. James Park is lovely. It is not large (93 acres), yet the gracious arrangement of trees and shrubs, the winding water, give it an impression of spaciousness. It skirts the broad avenue leading to Buckingham Palace and is flanked by stately buildings. It is loveliest just before sunset, when the trees are casting their longest shadows upon the golden sward and the pelican and heron upon Duck Island are pruning and prinking for the night, their glistening white breasts blushing softly in the sun's last light. There are soft bird-calls and rustlings and twitterings; there is the odor of many flowers; the city's noise is hushed to a distant hum; far away the Westminster bells boom softly; the light fades, flickers, and is gone—so comes the night.



CHAPEL OF HENRY VII: WESTMINSTER ABBEY, LONDON

This exceedingly beautiful chapel was erected by Henry VII, who, with his wife, Elizabeth of York, lies buried here. The whole of the elaborate and intricate carvings call for special admiration, and above the quaintly carved stalls of the Knights of the Garter are their helmets, swords, and banners.



ANOTHER VIEW OF THE CHAPEL OF HENRY VII: WESTMINSTER ABBEY, LONDON

The history of the present great church begins with Edward the Confessor. It is a florid perpendicular and there is nothing lovelier anywhere

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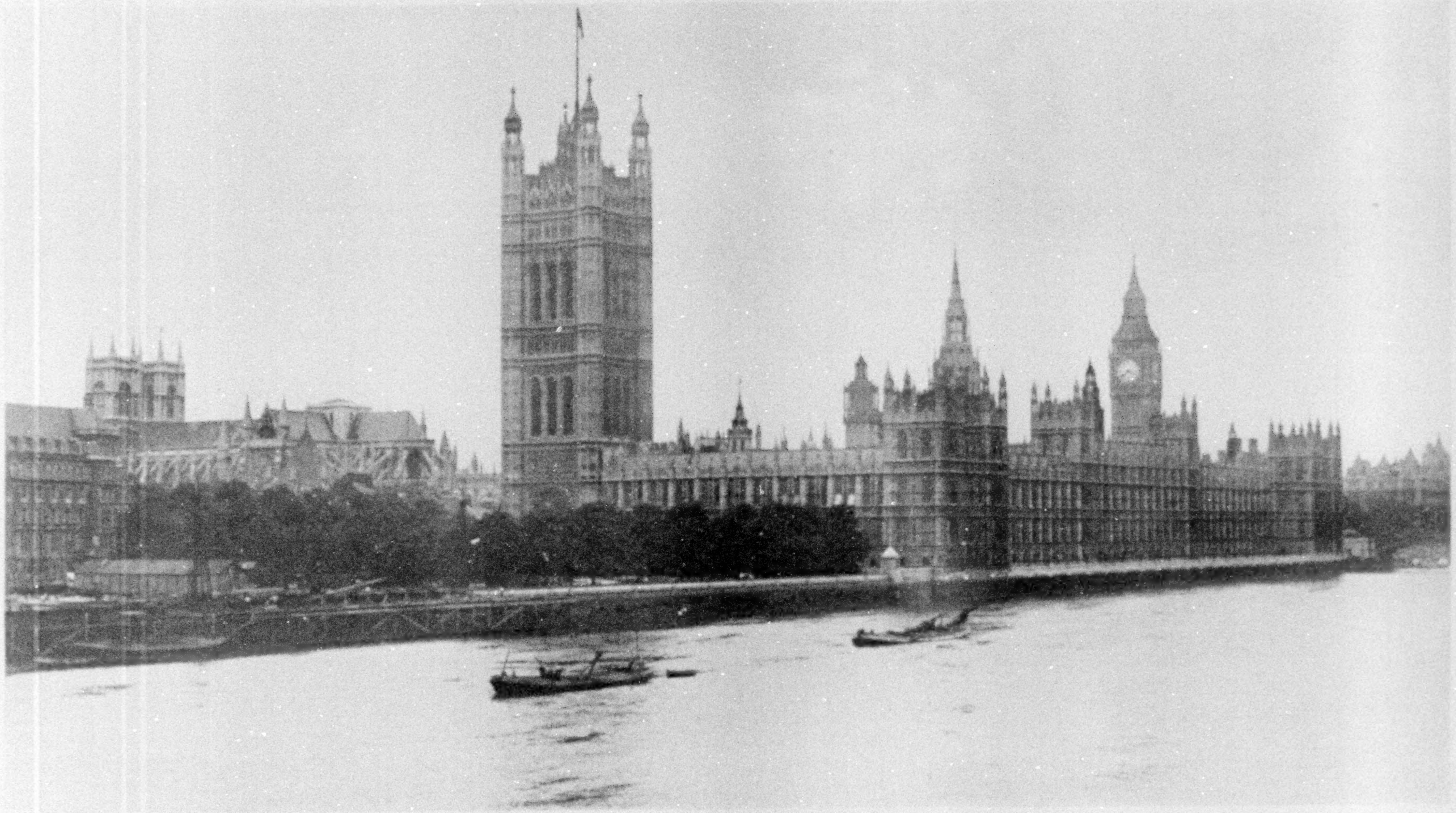
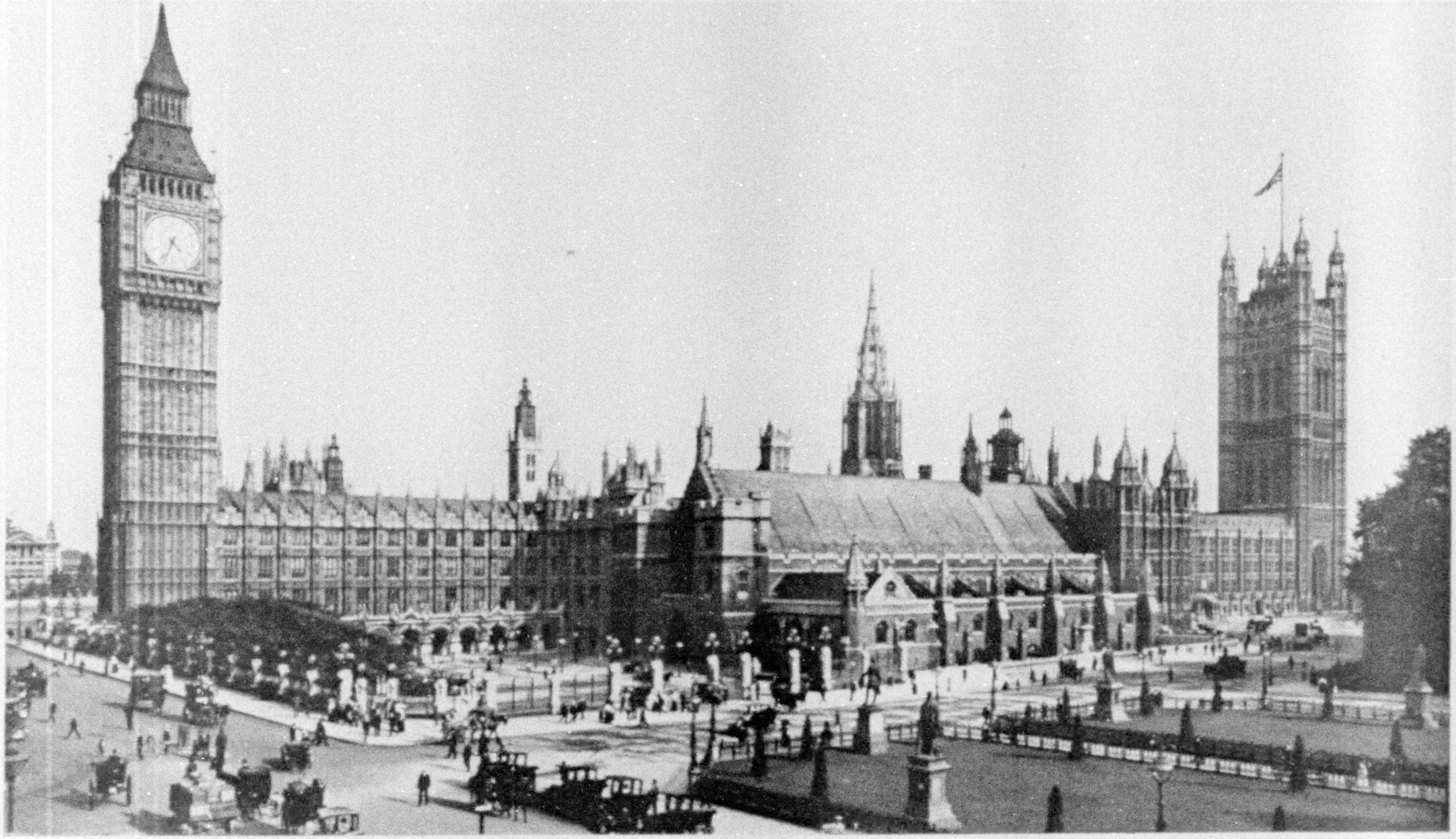


HOUSES OF PARLIAMENT AND WESTMINSTER ABBEY: LONDON

"The Houses of Parliament are new—very new—for England and do not oppress us with our own youthfulness. There is no question that they are beautiful. They spring from the river bank like delicate grasses, with here and there a stately, overtopping flower" (see page 285).



PARLIAMENT SQUARE FROM NEW PUBLIC OFFICES: LONDON

The new Palace of Westminster, together with Westminster Hall, forms a single pile of buildings erected since 1840 and covering eight acres. It contains eleven courts, one hundred staircases, and eleven hundred apartments. It has cost in all about $15,000,000. The exterior stone is gradually crumbling, and the basement rooms are said to be lower than the Thames River at high tide.

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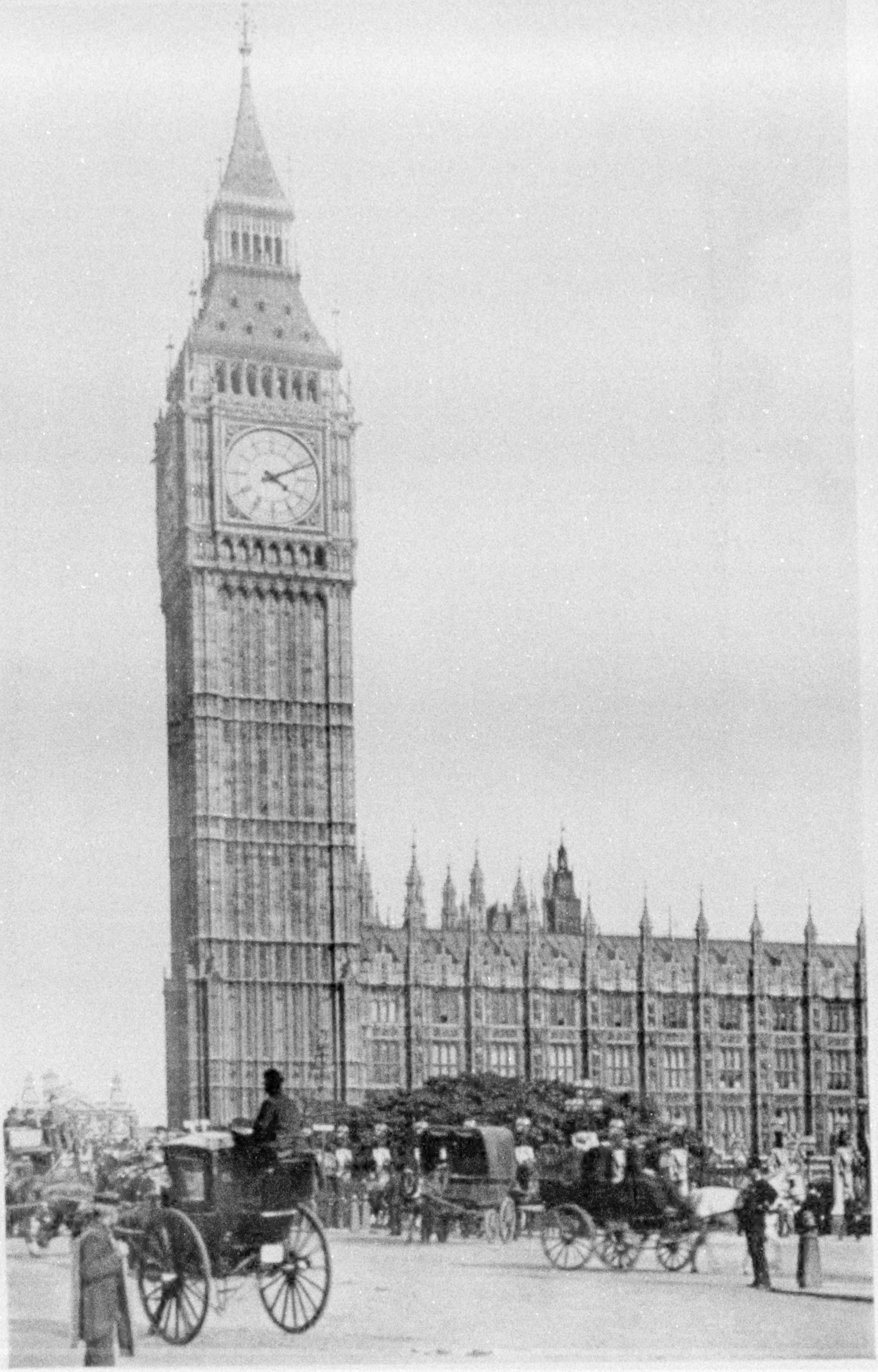
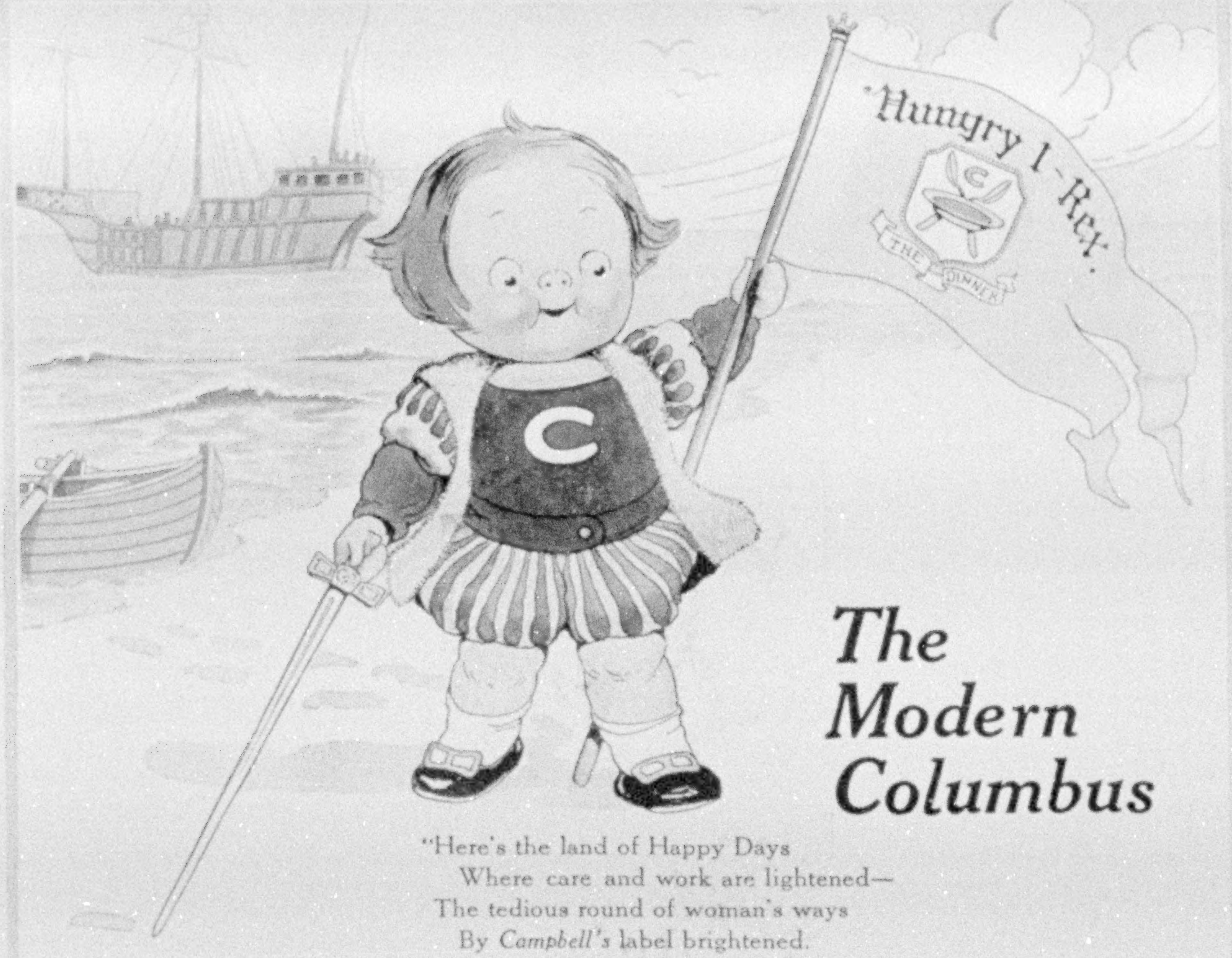


BIG BEN AND HOUSES OF PARLIAMENT: LONDON

The tower is 300 feet high and the clock 22½ feet in diameter. The great bell, Big Ben, upon which the hours are struck, weighs 13½ tons. A light is shown at night to denote when the "House" is sitting (see text, page 286).



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Where care and work are lightened—
The tedious round of woman's ways
By *Campbell's* label brightened.

"Here Mother gets a chance to shine
At meals no more belated.
While Father's grouch and Sissy's whine
Are quickly dissipated.

"Here kids may stuff their very worst,
Committing no transgression.
So in the name of Hungry First
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Do you realize how much practical every-day help it will give you if you only take the full advantage of it?

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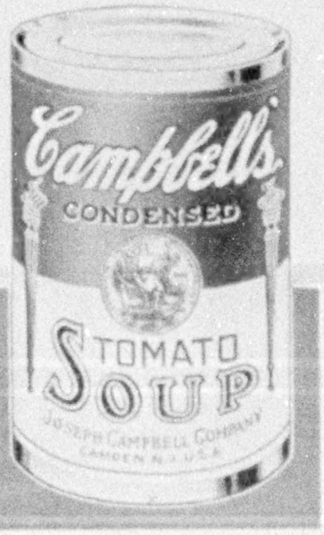

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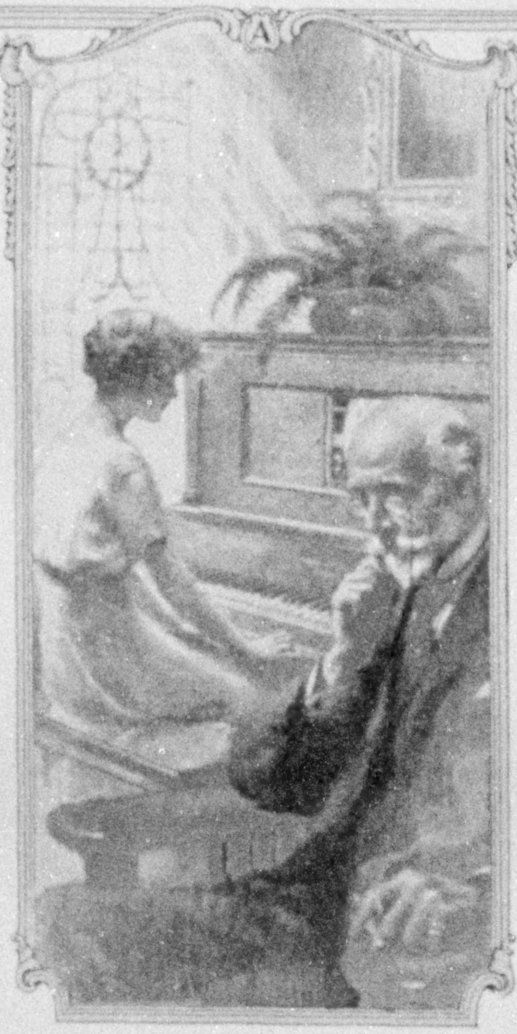
# Bringing a Greater Joy to Life

INSIDE the door lies the deepest, purest joy of life. It is the joy of music. To millions that door has been locked. They have been barred out, not by a lack of music feeling — for that is instinctive to everyone — simply by a lack of music's mechanics — of mere *note knowledge*.

That door of music was opened at the coming of the Pianola. The scaffolding of music, the notes themselves, it supplies. But it can almost immediately make of you — of everyone — a true musician, because it enables you to press your own music feeling into the instrument with exactly the spirit of a great pianist.

The only difference is that he has learned through painful years these same *mechanics* of the piano — the same mechanics which the Pianola, at a step, has *given* to you.



*"And she can play for you! All that you wish — tender old melodies to re-awaken fondest memories.*

What does it mean to the average person to be suddenly endowed with a perfect piano-technique, accompanied with the power to exercise that joyous "creation-feeling" which all skilled or instinctive musicians have?

It means for him, for you, a new and almost incredible source of joy. It means that the greatest masters of music beauty can be brought as intimately close to you as is Dickens or Balzac — the great masters of the pen.

And the Pianola for your child?

It means the development of a deep, true love and understanding of music that simple piano lessons alone could never perhaps develop. For scales develop only the *mechanical* ability — never the full abiding delight in the intelligent *understanding* of music.

That understanding — the very living soul of music — the Pianola will surely bring to your child. It will teach her to interpret music for herself — to love music — to take an infinitely greater interest in learning to play herself, by hand.

How is it that an instrument can, with automatic perfection, produce the note-structure of any music for you and yet allow you with infinite delicacy to put your own music-feeling into it — just as the great musicians do?

How?

Through a series of inventions which make it possible to weave through the notes themselves the moving beauties of emotion, of intensest human feeling — the life-force behind music. These inventions it is that set the Pianola far beyond the merely correctly mechanical but humanly unresponsive "player-piano".

They mean that in tempo and tonal variation the Pianola can easily, simply, respond to your every mood; that you can instinctively express that mood, and through any music — popular or classical, grave or gay.

So you can literally *press beauty* into music which, without these wonderful inven-

*A patented device that will automatically and correctly operate the "pedal" when desired.*

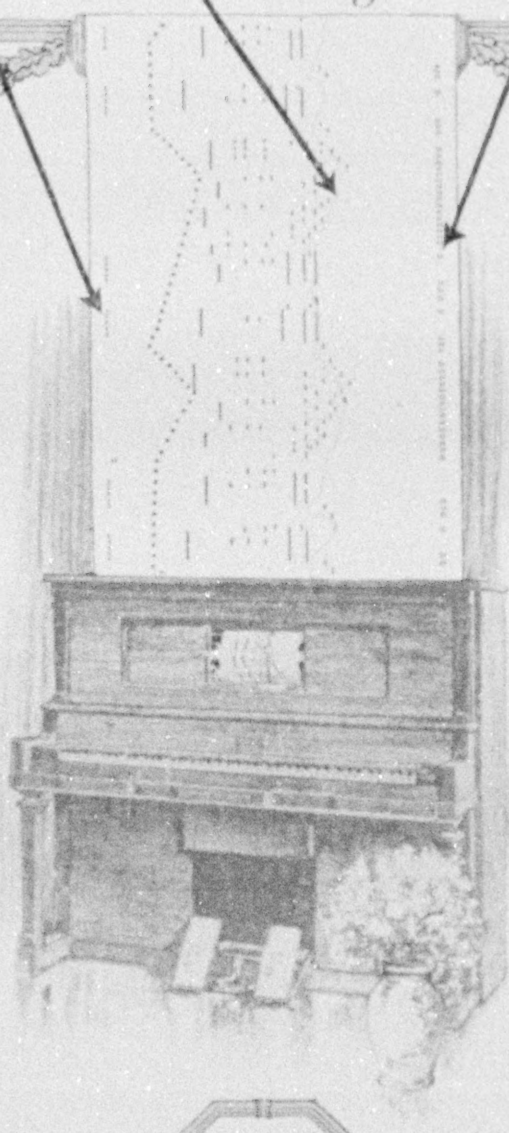
*The Pianola's wonderful patented guide to correct tempo and interpretation. Makes musicianly playing possible to all.*

*An important and exclusive device that automatically emphasizes the "melody" notes either in the treble or bass.*

The Automatic Sustaining Pedal

The Metrostyle

The Themodist



This great Piano that Paderewski says "should be in every home."

tions, had been mere notes—soulless, unemotional, unmoving.

One great invention—the like of which is not to be found on any other instrument—gives you command of "time." It shows you when and how to play—now gravely and majestically, now brightly, with hurried, tripping measures.

It enables you to interpret with infinite meaning—to introduce into your playing the thousand little graces of tempo, the delicate retards and rests and sprightly accelerations that bring out the subtle beauty of the music.

It makes of you, in fact, a finished artist of the piano.

Another invention, likewise exclusive with the Pianola, gives you command of one of the greatest of the pianist's arts—causing the melody to sing above the accompaniment. At the same time it removes the cause of one of the severest criticisms against the player-piano—the marring emphasis of the bass—the insistent and monotonous thump, thump of deep chords whose presence should only be suggested.

And still another invention takes care for you of the difficult and highly technical art of pedaling. It makes the "loud" pedal serve its proper purpose of sustaining harmonious notes and chords instead of simply producing loud, jangling tones, as it must if improperly used.

So, one by one, problems quite unattainable by the "player-piano" are met by the Pianola. The dulled melody is brought out. The over-insistent bass is regulated. The dead monotony of tempo is banished. The "feelinglessness" is gone. At a step you enter into the wonderful heritage of musical self-expression through music's most beautiful and comprehensive instrument, the piano. At a step you feel the power to regulate melody just as the great pianists do, who simply do so because they possess the "music mechanics" which the Pianola supplies even more effectively to you.

We want you to hear and know the Pianola—the real Pianola that towers musically so far above the so-called "player-pianos" its great success has brought upon the market. And that you may hear this wonderful instrument, we ask you to write us direct so that we may tell you the music house in your vicinity that handles it. We will also send you free a beautiful and impressive catalog, if you write.

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*The Steck Pianola*
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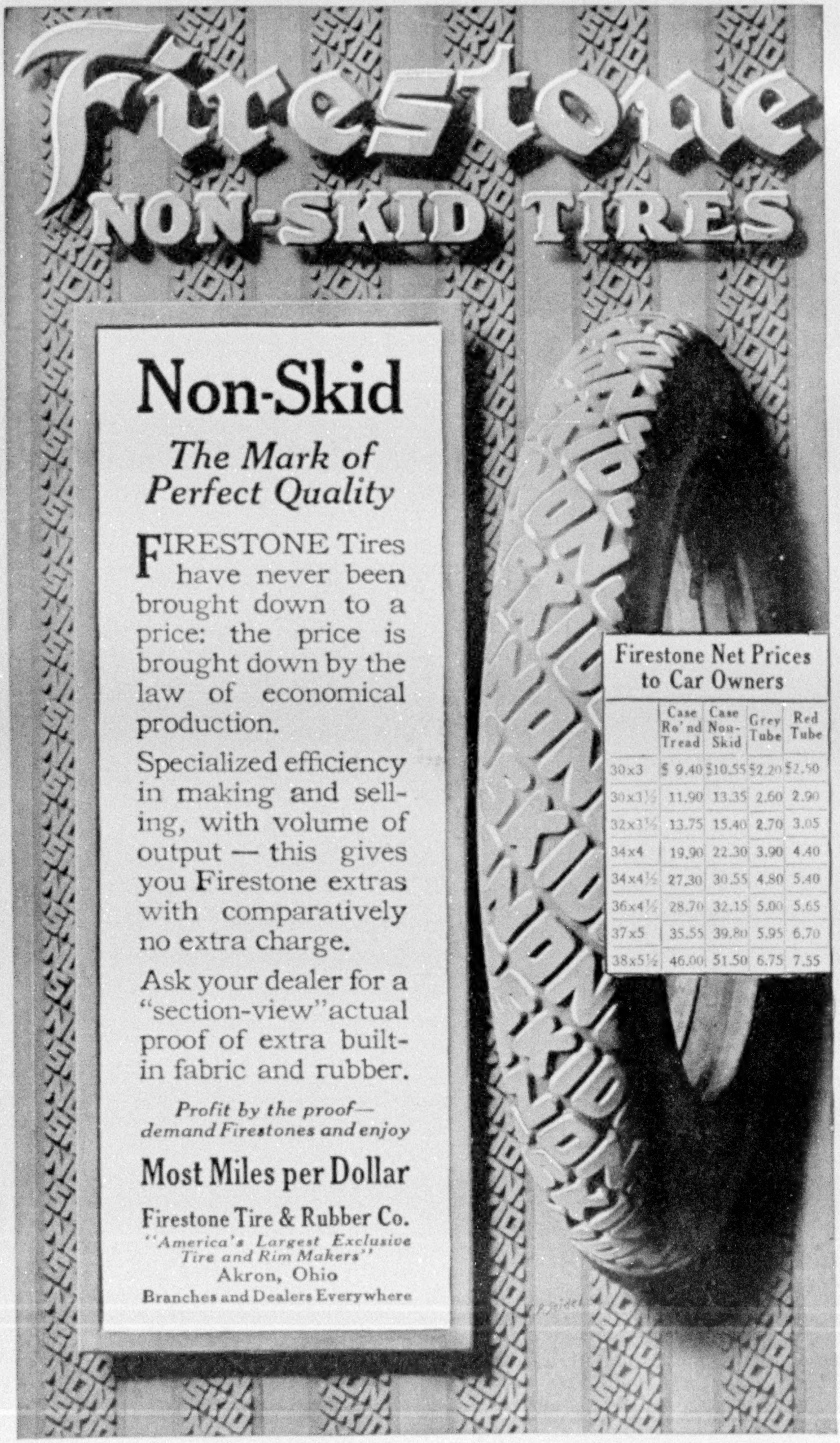

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| 30x3½ | 11.90 | 13.35 | 2.60 | 2.90 |
| 32x3½ | 13.75 | 15.40 | 2.70 | 3.05 |
| 34x4 | 19.90 | 22.30 | 3.90 | 4.40 |
| 34x4½ | 27.30 | 30.55 | 4.80 | 5.40 |
| 36x4½ | 28.70 | 32.15 | 5.00 | 5.65 |
| 37x5 | 35.55 | 39.80 | 5.95 | 6.70 |
| 38x5½ | 46.00 | 51.50 | 6.75 | 7.55 |

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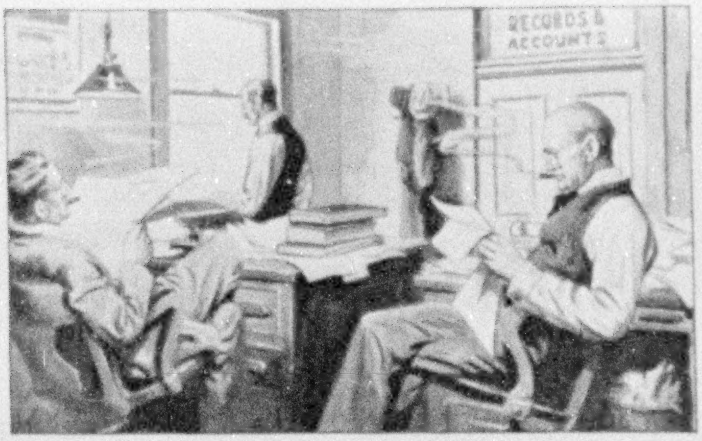
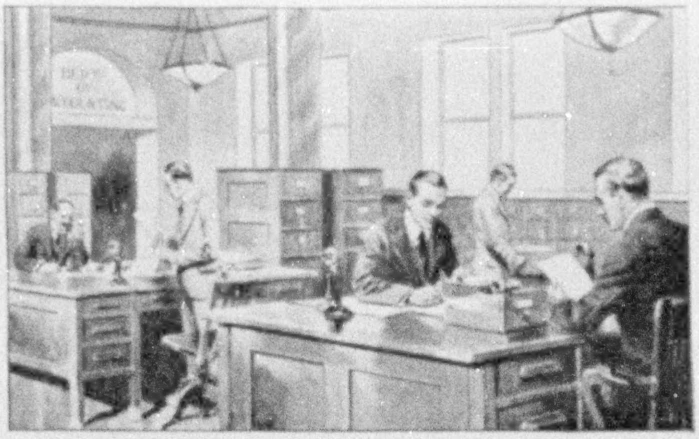
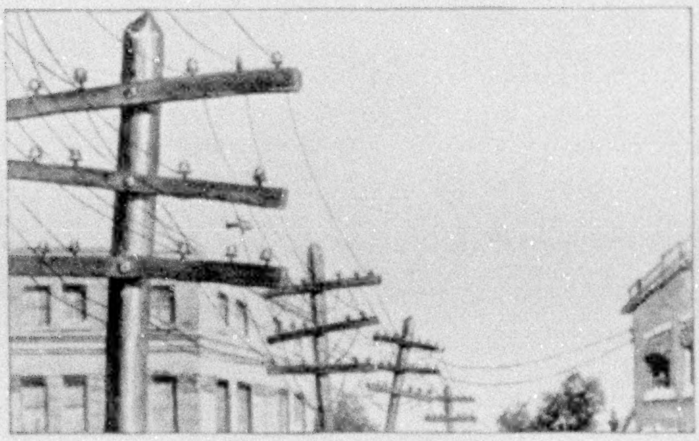
# Hidden Factors of Service



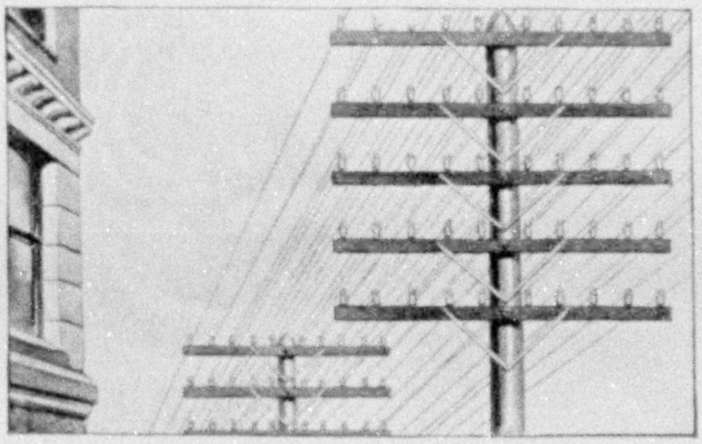
Records kept like this are practically useless for the management of a business. Efficiency is impossible and funds for improvement cannot be obtained.



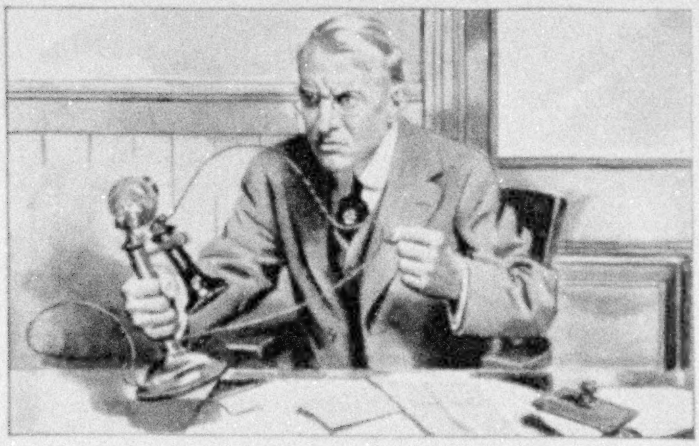
Records, statistics and accounts kept like this are available for a complete knowledge of the cost and efficiency of each department of the business.

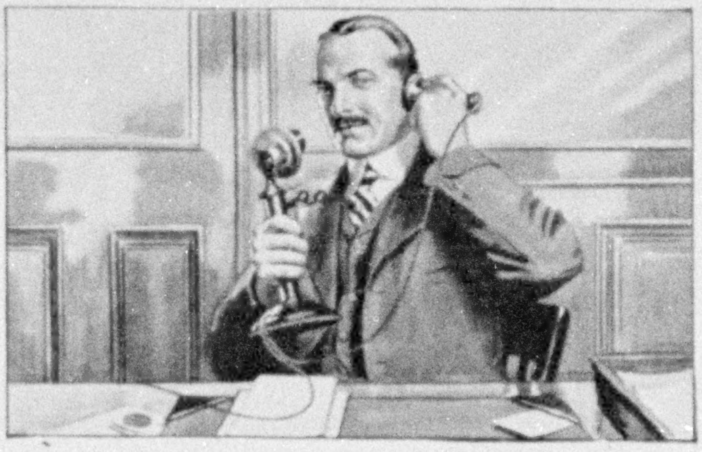


Such methods result in a telephone line which can give only poor service.



The result of such records is a telephone line like this, which gives good service.





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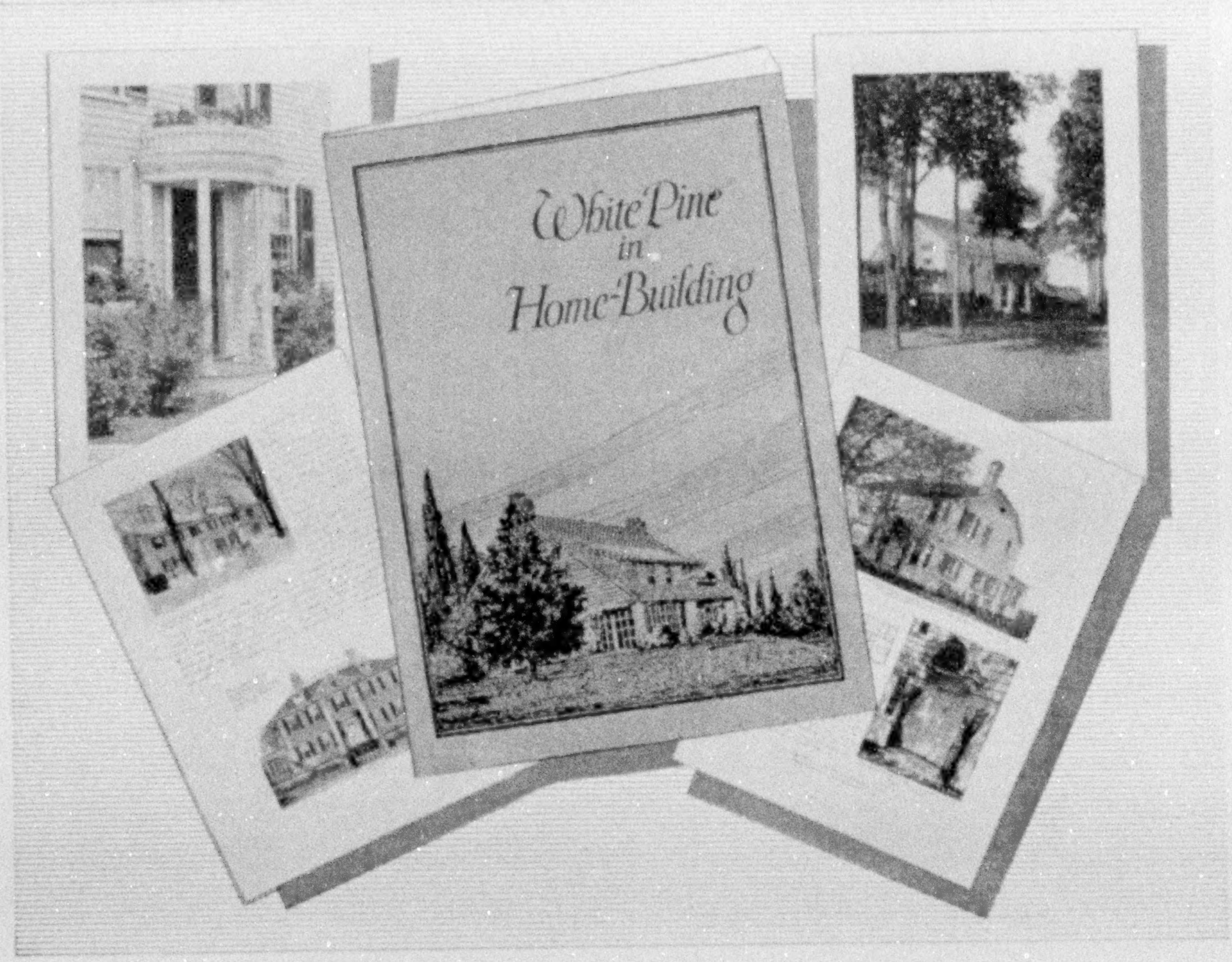

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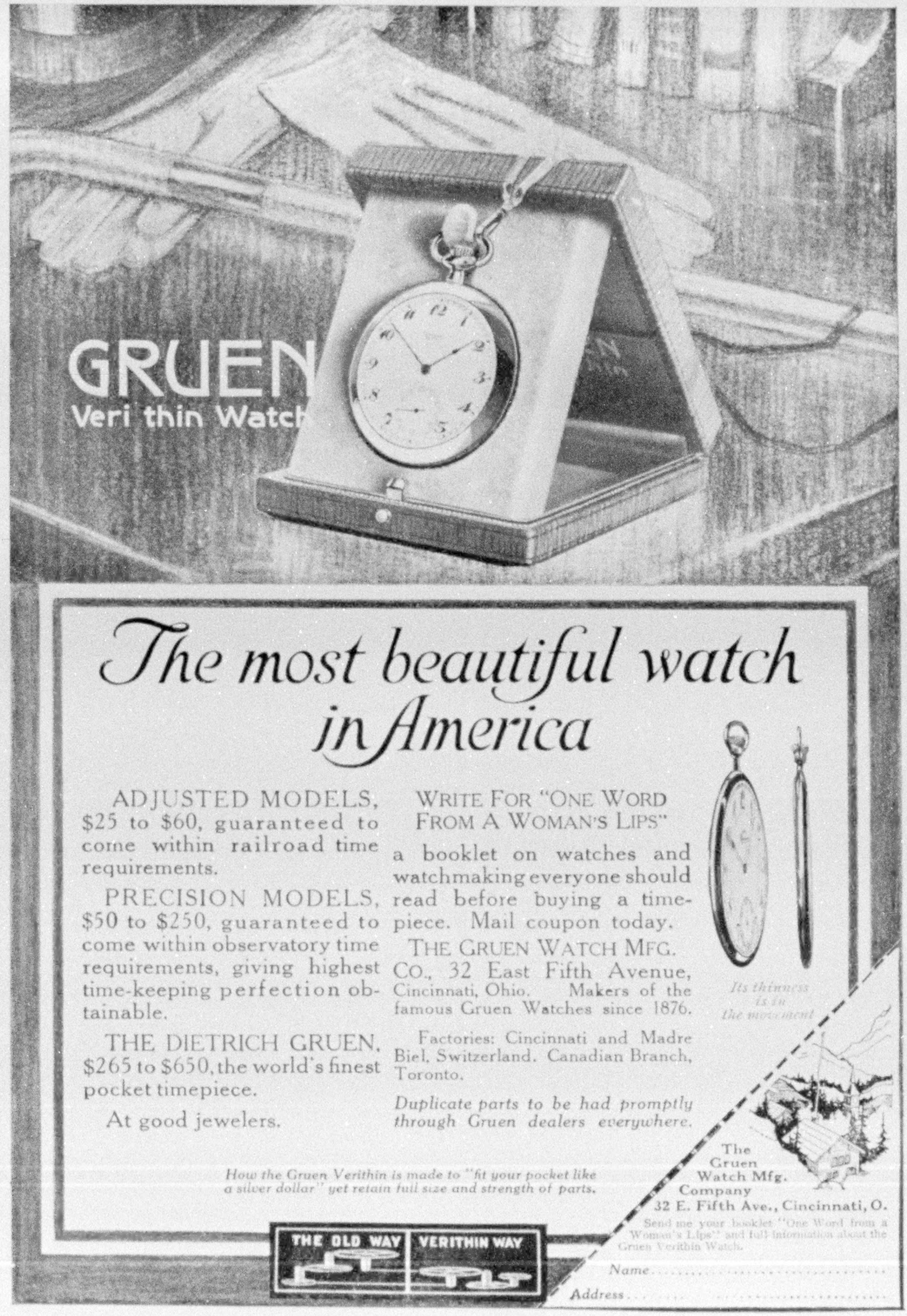

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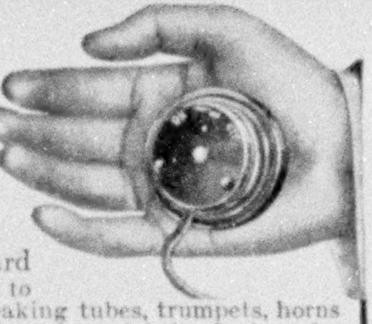
Now you can have your choice of the *powder or cream.* The one silver polish that contains no grit, no acid, no ammonia—the *only* silver polish that doesn't mar the finest, most delicate surface, *now* sold *in cream or* powder form for 10c.

The Cream is also put up in ½-pint (8 oz.) Glass Jars at 25c. each, and in Big 12-oz. Enamelled Tin Packages at 25c. each, which give you 50% more polish than can be bought from other manufacturers in the ordinary 8-oz. Glass Jars.

Ask your grocer, druggist, or department store—or mail price to us and we will supply you. Sample of powder and cream sent for 2c. stamp.

THE ELECTRO SILICON CO., 44 Cliff St., New York.

## Deaf Hear



All who are deaf or hard of hearing will be pleased to know that ear drums, speaking tubes, trumpets, horns and other old fashioned and unsightly devices for deafness are now a thing of the past. Write for a free book on the latest electrical invention, the

**New 1915 Thin Receiver Model**
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It enables the user to hear sermons, lectures, plays and conversations without difficulty. If your hearing is defective—if you feel that you are going deaf—this wonderful hearing device will give you instant relief. Be sure to write today for free booklet. Over 60,000 1913 and 1914 models now in use

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**15 Days' Free Trial!**

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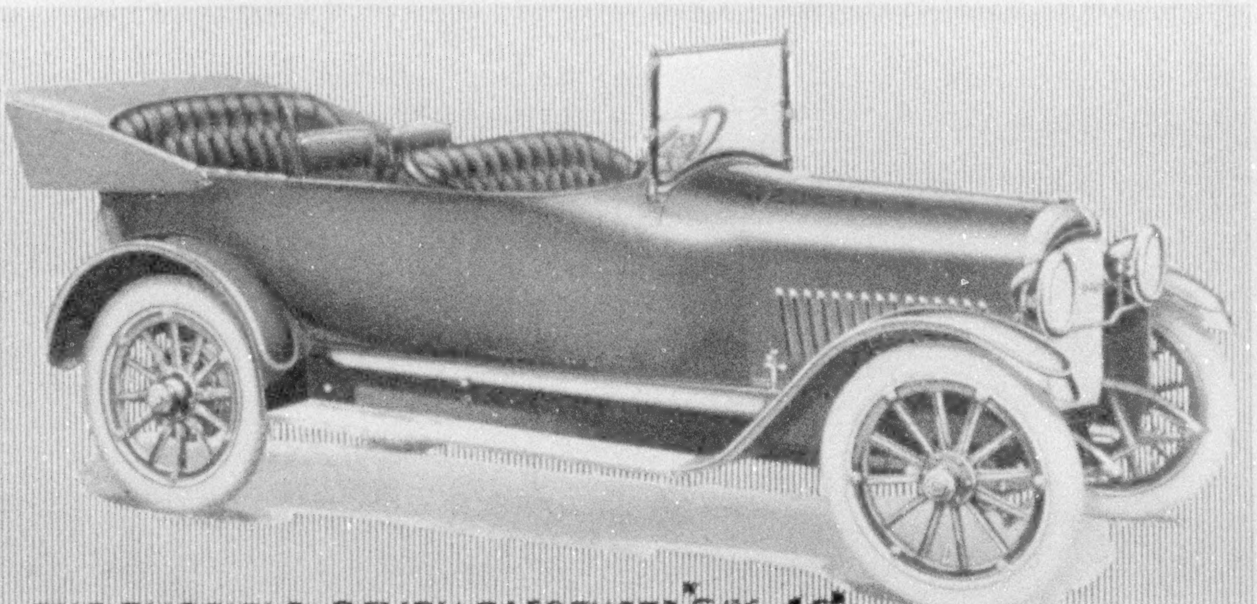
**Mears Ear Phone Co.**

45 W. 34th St. Dept. 1506 New York, N. Y



THE FAIRFIELD SEVEN PASSENGER "SIX-46"

# PAIGE

*The Standard of Value and Quality*

## WE ASK YOU TO JUDGE THIS CAR BY ITS QUALITY ALONE

The Paige "Six-46" sells for the astonishingly low figure of $1295. That, in itself, is impressive.

But, quite irrespective of price, we want you to see this six-cylinder car—examine it—ride in it—and *judge* it from a standpoint of Quality only.

It is by no means difficult to manufacture a car for a *price*.

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We urge you to buy it with absolute confidence because it bears the Paige name plate an enduring guarantee of fair dealing and honest manufacturing.

7-passenger "Six-46" **$1295** 5-passenger "Six-36" **$1095**

Cabriolet, $1600—Sedan, $1900—Town Car, $2250
(Closed car bodies on "Six-46" Chassis)

**The Paige-Detroit Motor Car Co.**
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XUM

The Moments Slip with Every Dip

The old-fashioned pen-and-ink-pot method of writing is wasteful—each dip means a moment lost, and sometimes the thought vanishes with it.

And, anyway, an ink-well cannot be carried to the class room, to the lecture, on the train or to the business call. Why don't you add to your efficiency and convenience by owning a fountain pen? Not merely a "fountain pen" but a

**Watermans Ideal Fountain Pen**

Then you will have a pen that is ready for instant use, anywhere—without the dip—a pen that never leaks, spurts, falters or hesitates. A pen that will exactly fit your hand-writing peculiarities—that will lighten your labor and save your time. Insist on the *genuine* Waterman's Ideal—the pen with the Spoon Feed.

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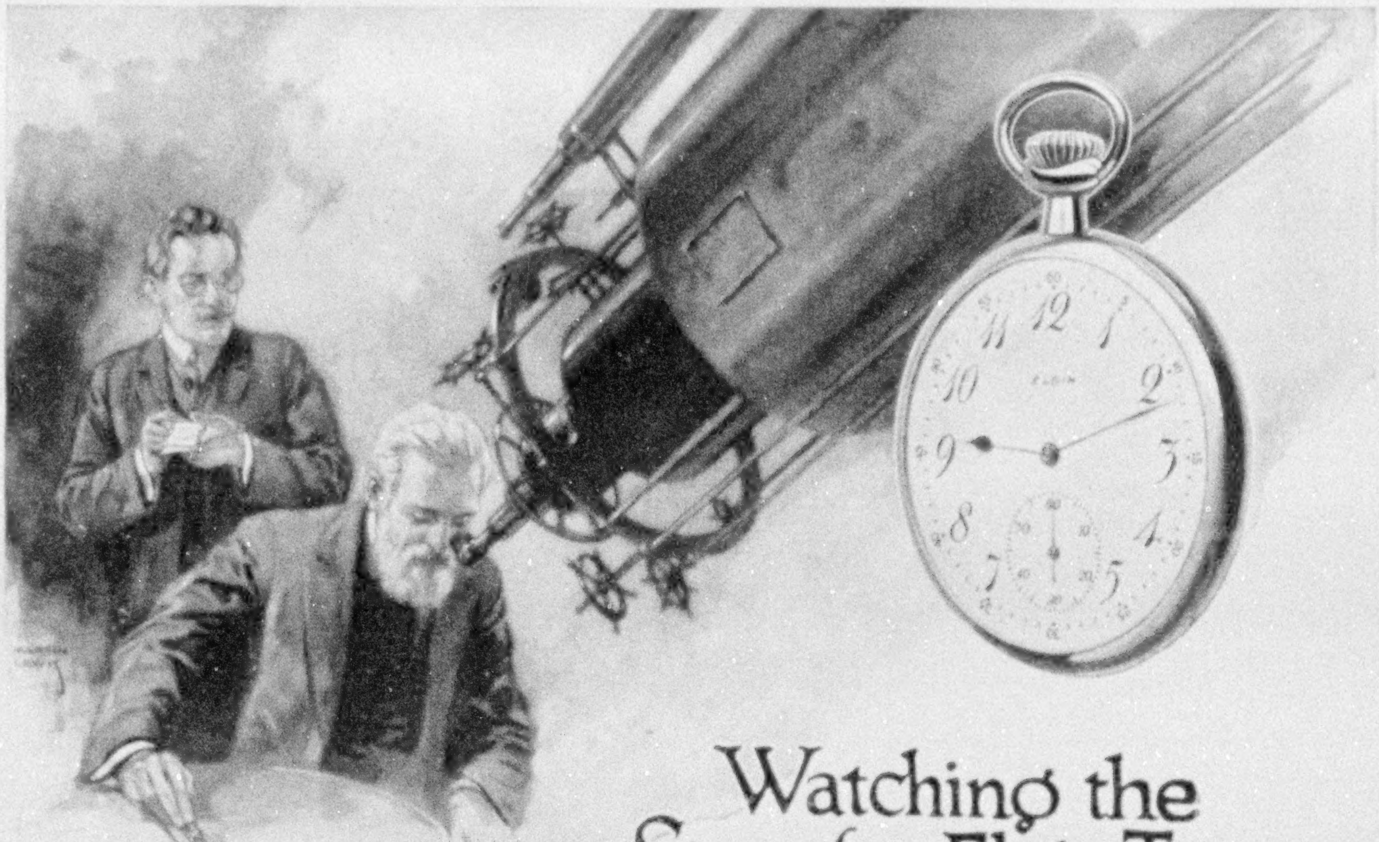

## Watching the Stars for Elgin Time

TWO astronomers watch the heavens every night at the Elgin Observatory.

By the stars, the only unvarying "clock" of the universe, these scientists verify and check the rating of the Elgin Master Clock by which all Elgin Watches are regulated.

They observe the transit of as many as twelve different stars every night and each star is checked eleven times against the possibility of human error. The average of these 132 observations is calculated for true star time, and this time is then translated into the time of the railroad, the factory and the man on the street.

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An Elgin Watch is a worth-while gift for young folks entering college, for birthdays and weddings.

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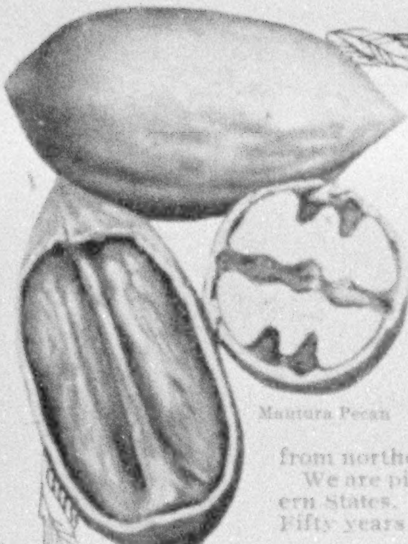

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Exquisitely Beautiful for Lawn, Driveway and Street

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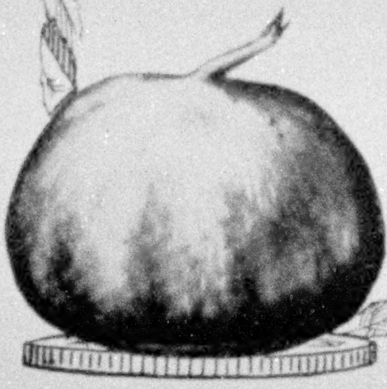

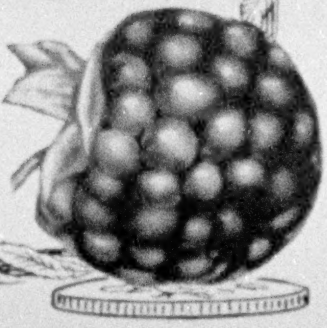

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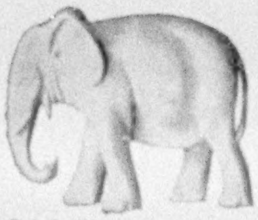

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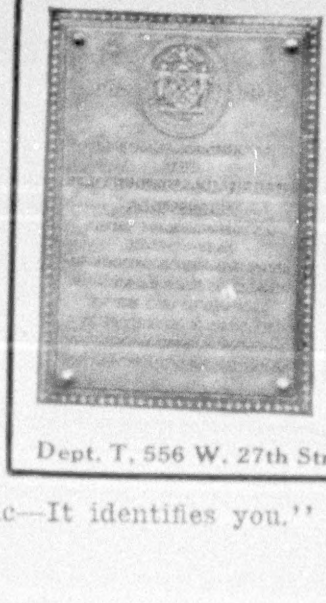

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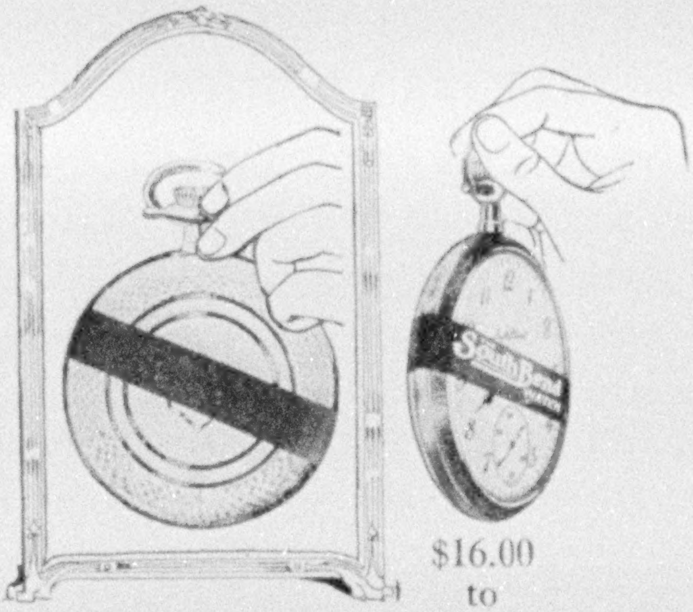

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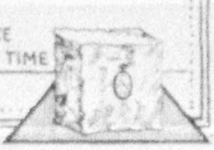

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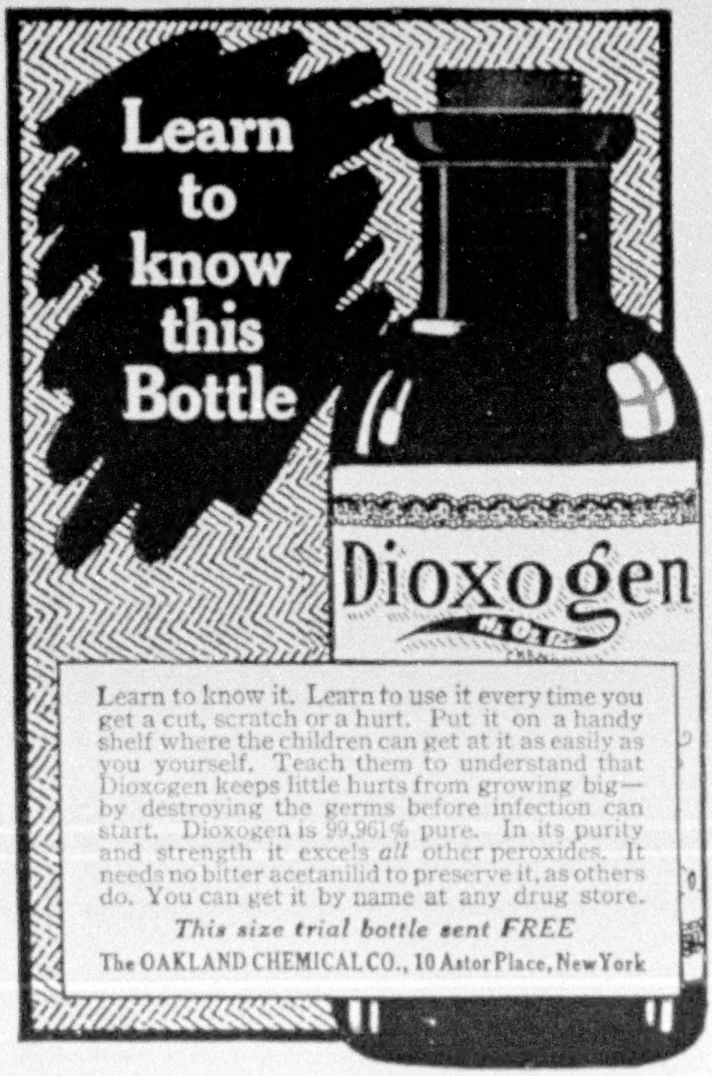

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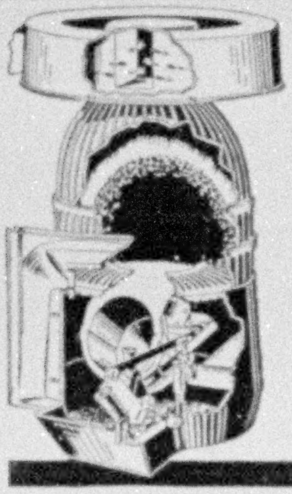

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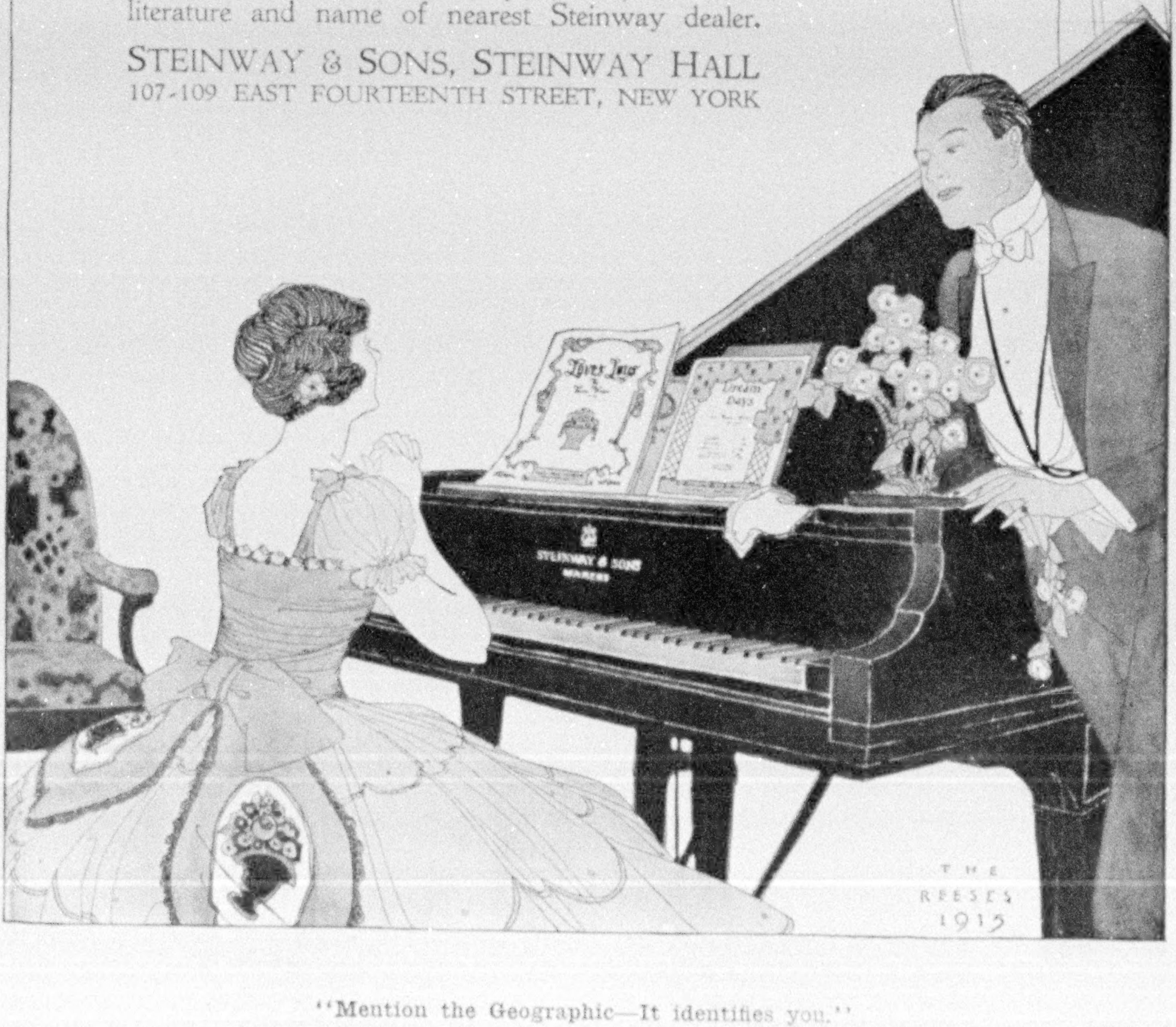

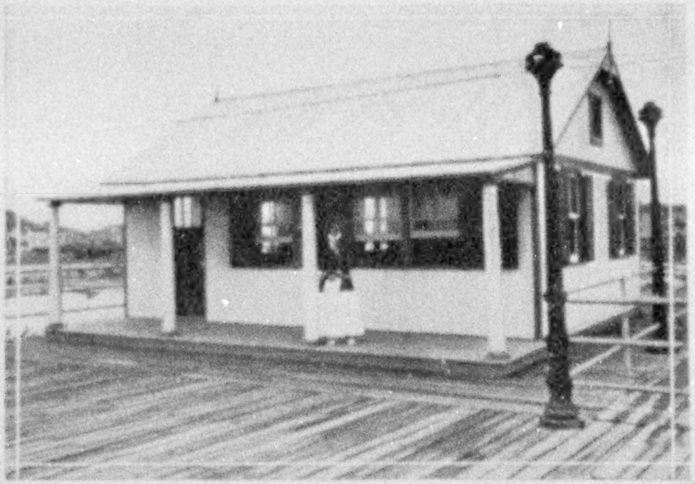

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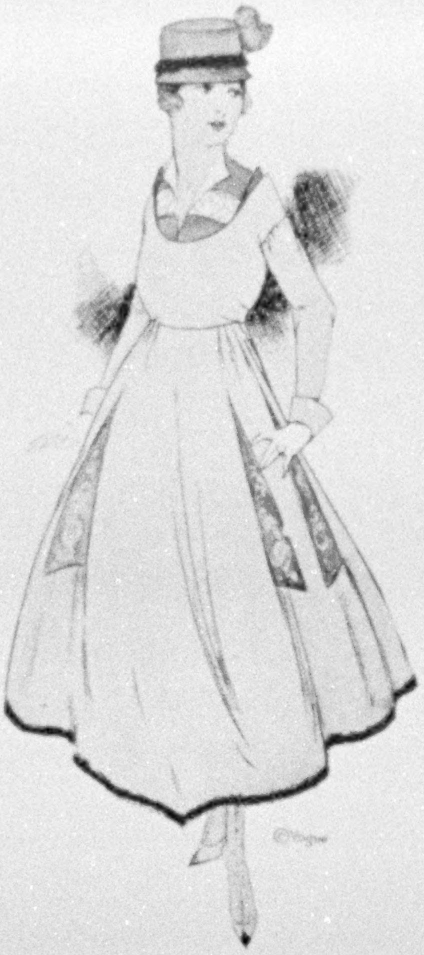
(Write your address)

# *The Paris Openings*
## NUMBER OF
# VOGUE



**is now on sale throughout the United States**

*A profusely illustrated number presenting the complete story of the Paris Openings, the successful creations of each couturier which taken collectively establish the Autumn and Winter mode. Vogue*

# *suggests*

*that before you spend a penny on your new clothes, before you even plan your wardrobe, you consult its great Autumn and Winter Fashion Numbers. During the very months when these numbers are appearing you will be spending hundreds of dollars for suits, gowns, hats, etc.*

## $2 Invested in Vogue will save you $200

The gown you buy and never wear is the really expensive gown! Gloves, boots, hats that miss being exactly what you want are the ones that cost more than you can afford!

Why take chances again this year when by simply sending in the coupon and at your convenience paying $2—a tiny fraction of the loss on a single ill-chosen hat or gown—you can insure the correctness of your whole wardrobe?

Vogue is a beautifully illustrated magazine the acknowledged authority on what is worn by well-dressed American women. Here are your twelve numbers (and one extra):

**Autumn Millinery Number**☆ **Sept 15**
The best one hundred model hats Paris has produced for the Autumn of 1915

**The Paris Openings** **Oct. 1**
The complete story of the Paris Openings—the successful creations of each couturier which taken collectively establish the mode

**Autumn Patterns** **Oct. 15**
Working plans for your entire Winter wardrobe—the newest models adapted to pattern form

**Winter Fashions** **Nov. 1**
Showing the mode in its Winter culmination—charming models smart couturiers evolve for their private clientele

**Vanity Number** **Nov. 15**
Those graceful little touches that make the smart woman smart, where to get them and how to use them

**Christmas Gifts** **Dec. 1**
Vogue's solution of the Christmas-gift problem. A new idea

**Christmas Number** **Dec. 15**
More gifts and practical ideas for holiday entertaining

**Lingerie Number** **Jan. 1**
Fine Linen for personal use and for the household

**Motor and Southern** **Jan. 15**
The new fashions in motor cars and the new wardrobe for the southern season!

**Forecast of Spring Fashions** **Feb. 1**
Earliest authentic news of Spring styles. Fully illustrated

**Spring Millinery** **Feb. 15**
Hats, bonnets, and toques from the famous milliners of Paris

**Spring Patterns** **Mar. 1**
Working Models for your Spring and Summer wardrobe

**Paris Spring Openings, Mar. 15**
The Spring exhibitions of the leading couturiers of Paris

*"Nine out of ten women copy what the tenth does; the tenth is a reader of VOGUE."*

## ☆SPECIAL OFFER

Send in the coupon below with $2 and we will send you, with our compliments, a copy of the **Autumn Millinery Number** showing the best one hundred model hats that Paris has produced for the Autumn of 1915, making thirteen numbers instead of twelve.

Or, if more convenient, send coupon without money and your subscription will then start with the *Paris Openings Number* and continue throughout the next eleven numbers, twelve numbers in all.

VOGUE, 443 Fourth Avenue, New York City

Send me twelve numbers of Vogue, beginning with the Paris Openings Number, and I will remit $2 on receipt of bill, Nov 1st. (OR) I enclose $2 herewith and shall expect thirteen numbers of Vogue, beginning with the Autumn Millinery Number.

Name
(Please write name very plainly)
Street
City
State
N.G. 9-15

## Moons' Shade Trees For Lawns and Streets

There is a vigor of growth and shapeliness of form about Moons' Trees that make them superior; there is an abundance of fibrous feeding roots that minimize transplanting losses.

Moons claim and Moons have some HARDY TREE AND PLANT FOR EVERY PLACE AND PURPOSE.

October begins the Autumn planting season, send for catalog NOW.

**THE WM. H. MOON COMPANY**
NURSERYMEN
Yardley Road, Morrisville, Pa.

**Philadelphia Office**
**21 S. Twelfth Street**

**The Moon Nursery Corporation**
**White Plains, N. Y.**

## *Thorburn's* *Bulb Catalogue*

Send for *your* copy. Our bulbs are full size, true to name and *very* beautiful.

We have a really wonderful assortment of 66 of our choicest bulbs for $1.00. You may send a dollar bill pinned to your order at our risk.

To those who love flowers and "growing things," our Bulb Catalogue will be a revelation. Send for it today.

J. M. THORBURN & CO.
**53 Barclay St., through to 54 Park Place**
**New York**

## TREES *That Save* 10 YRS

OCTOBER is the time to plant trees that save 10 years. Guaranteed to grow satisfactorily or replaced. Returnable and freight paid both ways if not satisfactory.

Our records for the past 5 years show that out of 614 large trees, fifteen to thirty years old, only 44 failed.

We have been growing and advertising these big trees for the past 20 years.

**Maples, Lindens, Oaks, 16 ft. wide**
**Pines, 14 ft. high**

Fitted to the climate, from Kentucky to Maine. Berry-bearing shrubs to attract birds, 10 kinds, $2.00.

**HICKS NURSERIES** **Westbury, L. I., N. Y.**

## The New Geographic War Map

NEVER before has there been such a demand for maps of any part of the globe as there is today for maps of Europe.

The popular need of a really official map is quite as great as the necessity for newspapers and magazines, for whoever reads at all reads about the war and seeks to understand the shifting battle lines in its several theaters. Such a map the National Geographic Society is now able to offer to its members and their friends in an up-to-date and thoroughly accurate chart of the entire area involved, from the Dardanelles to Petrograd; from Palestine to Portugal, and from western Ireland to eastern European Russia.

The requests for a comprehensive and reliable map were so numerous that at great expense the Society has had this map compiled and drawn from the best surveys of Europe, on a scale of 84 miles to the inch, giving every important city, town, and village, and as full of detail as legibility will permit.

With this map and several boxes of assorted colored pins, one may keep intelligent trace of all the battle lines of Europe as they shift from day to day with the tide of war.

Extra copies of this map, which is 28 x 30 inches in size, and printed in four colors, at 25 cents per copy, postpaid; mounted on linen, 75 cents; Canada or Foreign, 12 cents addition for postage.

DEPARTMENT M, NATIONAL GEOGRAPHIC MAGAZINE,
WASHINGTON, D. C.

CUT ON THIS LINE

DEPT. H, NATIONAL GEOGRAPHIC SOCIETY,
16th and M Streets, Washington, D. C.

________________, 1915.

Please send ______ copies of the **New Geographic War Map,** for which I enclose herewith ________

If several copies are desired, write names and addresses and send with your card; we will mail them for you.

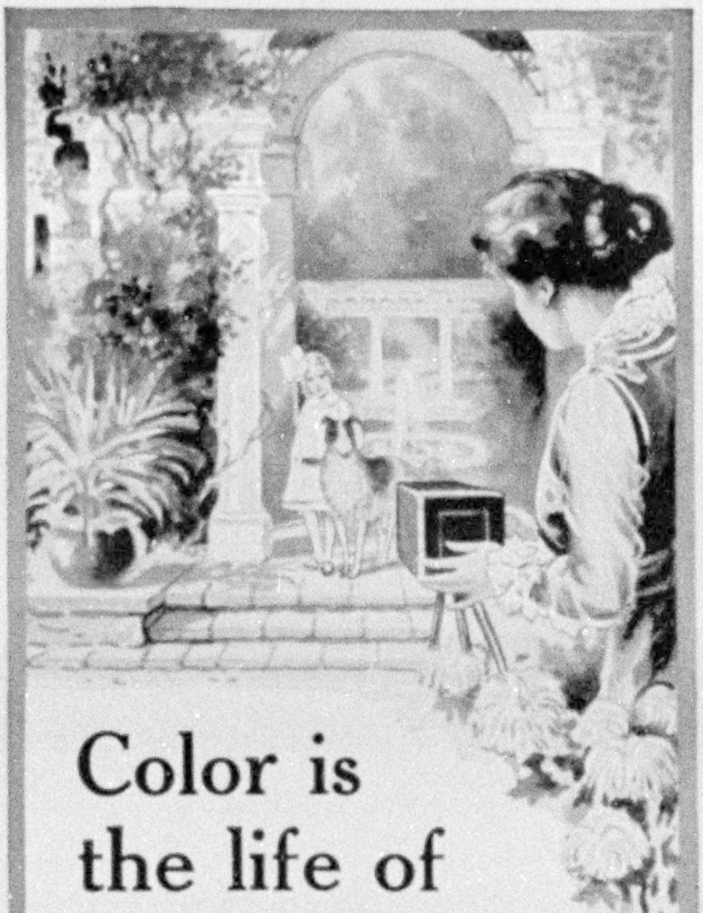
**Printed on Map Paper (size, 28 x 30 inches), Postpaid, 25 cents.**
**Mounted on Linen, postpaid, 75 cents.**
**Canada or Foreign, 12 cents extra postage.**

9-'15

Name ________________

Street Address ________________

City and State ________________

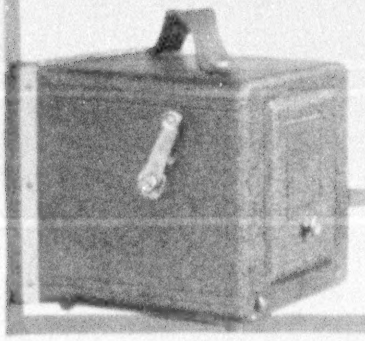


# Color is the life of the picture

HICROGRAPHY is the art by which everyone with even a rudimentary knowledge of photography can make direct color photographs (or hicromes)—one, or a hundred alike. The

## Hess-Ives Hicro Camera

which is the invention of F. E. Ives, is the crowning work of one whose genius has vivified and beautified the printed page by making practical the art of half-tone illustration. It is a development that has come through patient delving, sleepless nights and tireless days. It preserves, as a permanent memento, any subject—the human face—flowers—landscapes—in all of Nature's colorings, recalling vividly to your friends happily spent hours and days.



The
Hess-Ives
Corporation
1201 Race St.
Philadelphia

*We shall take pleasure in sending you a catalogue of Hicro Cameras*

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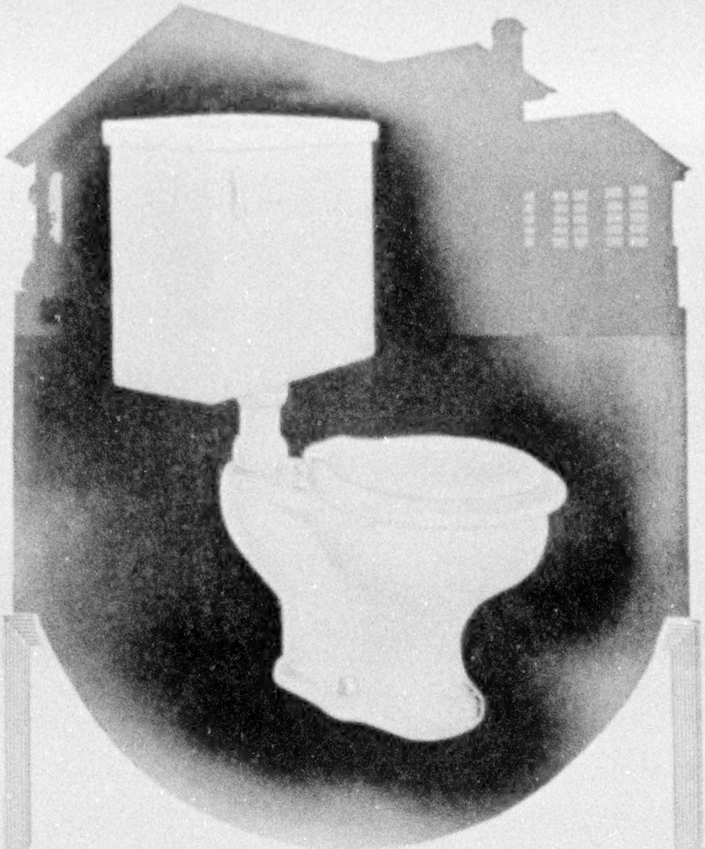


*It Makes No Noise!*

No matter how many improvements your closet may have, if it isn't silent it is a constant source of discomfort. If it's a Si-wel-clo, it will operate so quietly it cannot be heard.

The Trenton Potteries Company

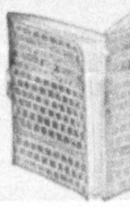
# SI-WEL-CLO

## Silent Closet

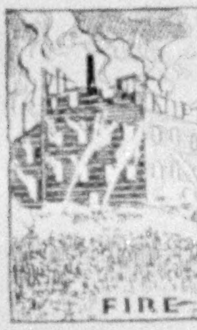
It can't be heard because it was designed to be quiet, and yet not a single sanitary feature has been neglected. Even if its highly glazed surface should be deliberately chipped with a hammer, it would still be white and impervious to grease and acids. The Si-wel-clo is not too expensive for a home costing $4000.

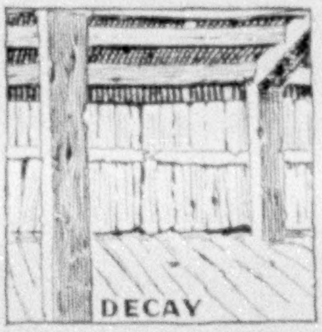
Architects and Plumbers know and recommend the Si-wel-clo and all our other sanitary products.

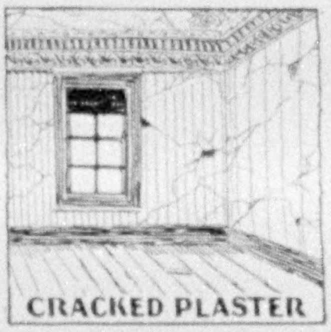
Before you decide on bathroom fixtures, send for booklet R- 27, "Bathrooms of Character" (shows plans and designs)



**The Trenton Potteries Co.**
Trenton, N. J. U. S. A.
*"The Largest Makers of Sanitary Pottery in the U. S. A."*







*Banish the Evils of Wood Joists and Studs*

Use Kahn Pressed Steel

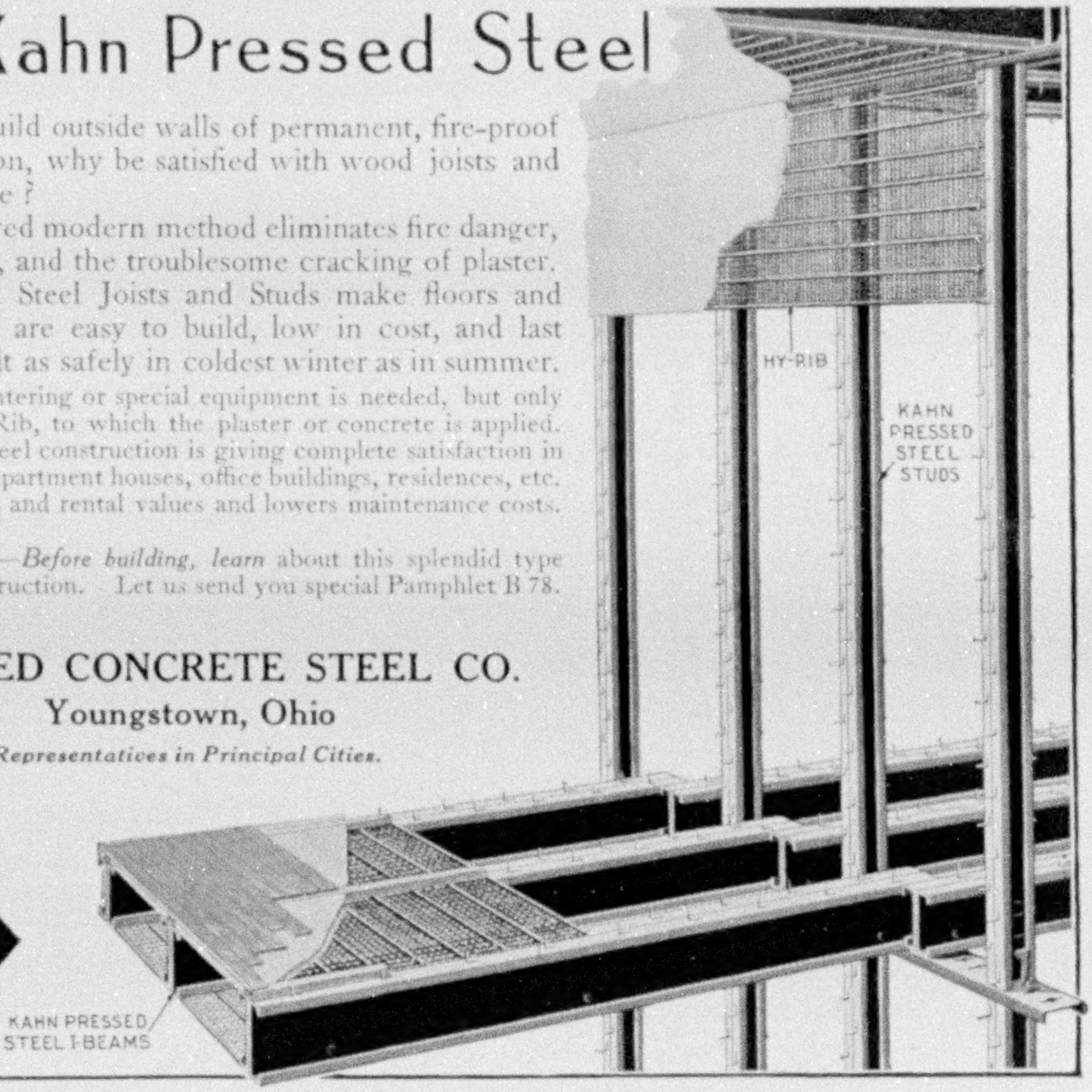
IF YOU build outside walls of permanent, fire-proof construction, why be satisfied with wood joists and studs inside?

¶ The approved modern method eliminates fire danger, vermin, decay, and the troublesome cracking of plaster. Kahn Pressed Steel Joists and Studs make floors and partitions that are easy to build, low in cost, and last forever. Built as safely in coldest winter as in summer.

¶ No forms, centering or special equipment is needed, but only the use of Hy-Rib, to which the plaster or concrete is applied. Kahn Pressed Steel construction is giving complete satisfaction in stores, schools, apartment houses, office buildings, residences, etc. It increases sales and rental values and lowers maintenance costs.

**IMPORTANT.**—*Before building, learn* about this splendid type of modern construction. Let us send you special Pamphlet B 78. *Write today.*

TRUSSED CONCRETE STEEL CO.
Youngstown, Ohio
*Representatives in Principal Cities.*



**KAHN Building Products**
TRUSSED CONCRETE STEEL CO

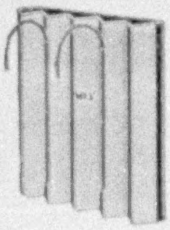
No. 1
SAVO AIR MOISTENER
SAVO MFG. CO.
CHICAGO

**SĀVŌ AIR MOISTENER**

**FOR HOMES, OFFICES, SCHOOLS, HOSPITALS**

Fill with water and hang on back of any radiator, out of sight. Converts dry indoor air into a moist, healthful atmosphere. Saves health, interior woodwork, furniture, pianos, wall paper, paintings, books, plants, etc. Money refunded if not satisfactory. Three sizes, $2.00, $1.75, $1.00. Write for free booklet.

**SĀVŌ MANUFACTURING CO.,** 320 N. Y. Life Bldg., Chicago, Ill.



*The* Pro-phy-lac-tic Tooth Brush

A clean tooth never decays—the Pro-phy-lac-tic keeps teeth clean

*"THE BUNGALOW BUG STILL BUSY"* and *"NOTHING TO IT BUT CYPRESS"*

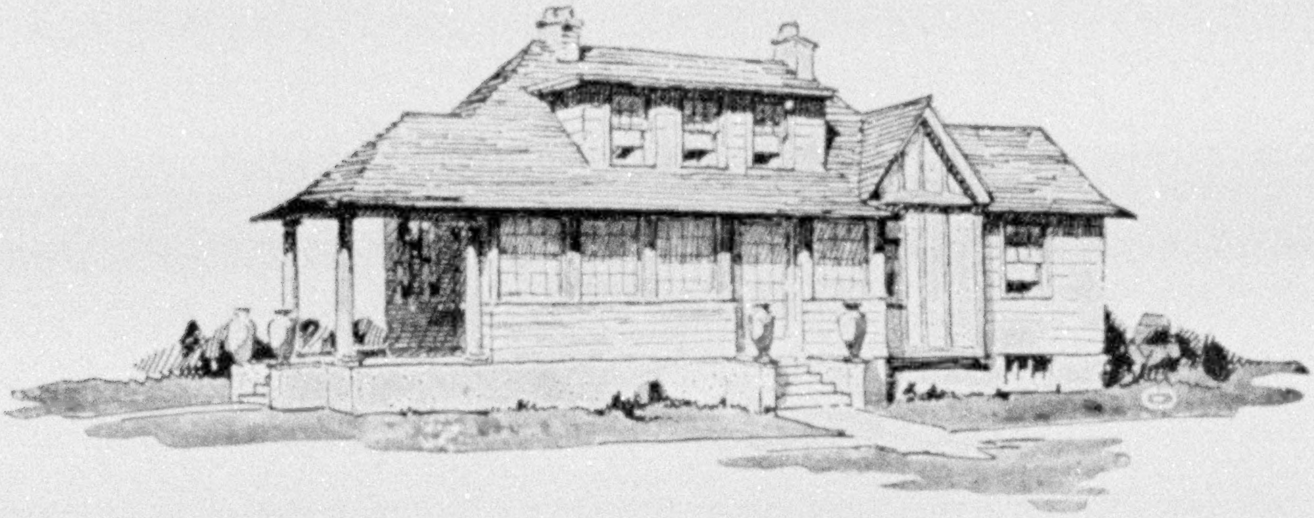
CYPRESS AVERTS REPAIR BILLS

for people who want to vaccinate their building investment against the Repair Bill Bugaboo.

Thousands have been writing us for plans for a $5,000 CYPRESS BUNGALOW — so here it is:

CYPRESS DEFIES DECAY

# CYPRESS BUNGALOW "C"



THIS IS AN EXCEPTIONALLY INTERESTING and ARTISTIC **CYPRESS BUNGALOW** SPECIALLY DESIGNED FOR US BY ONE OF NEW YORK'S ABLEST and BEST KNOWN ARCHITECTS

## WE ADVISE IMMEDIATE APPLICATION

for **VOL. 8, CYPRESS POCKET LIBRARY** (*NEW*)

*SENT FREE ON REQUEST TO ANY ADDRESS IN THE WORLD.*

SPECIFICATIONS GO WITH WORKING PLANS and are SUFFICIENT for any competent carpenter TO BUILD FROM.

The less you are able to spend in building, the more important it is that you secure the longest possible life for your investment. The *more* you spend, the more important it is that your money represent a *permanent* investment, and not have to be spent over again in exasperating repairs. CYPRESS is "the one best buy" in the entire wood market for those who care what they get for their lumber money. "CYPRESS lasts practically forever." CYPRESS RESISTS THE ROT-INFLUENCES which so soon destroy other woods. CYPRESS does not warp or shrink or swell like most woods—and takes paint or stain perfectly. Whether for MANSION, PASTURE-FENCE OR "LITTLE JOB OF BACK-STEPS"—remember—"IF YOU BUILD with CYPRESS YOU BUILD but ONCE."

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*Ask our* "ALL-ROUND HELPS DEPT." *any* question about Wood. Our reply will be frank. We recommend CYPRESS *only* where CYPRESS can *prove* itself "the one best wood" for *your* use.

## SOUTHERN CYPRESS MANUFACTURERS' ASSOCIATION

**1224 Hibernia Bank Building, NEW ORLEANS, LA., and 1224 Heard Nat'l Bank Bldg., JACKSONVILLE, FLA.**

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We *produce* CYPRESS *but do not retail it.* INSIST ON IT NEAR HOME. *Wide awake Local Dealers sell CYPRESS; if yours does not, WRITE US, and we will tell you where you CAN get it.*

Vantine's
The Oriental Store

# New Catalog Is Ready

## Write For Your Free Copy Now

ILLUSTRATES and describes thousands of Oriental objects of art and utility—that may be ordered by mail with the same assurance of satisfaction as though you personally purchased in our store. Write now, and by return mail we shall send postpaid a copy of this de luxe edition and explain how you can do your shopping by mail promptly, pleasantly and profitably at Vantine's.

CONTAINS page after page of distinctive and unique Oriental objects—many in actual colors—collected by our representatives in the far away East. (A veritable "Guide to Gift Land" with thousands of suggestions for gifts.) Simply send us your name and address on a postal card, and mention The National Geographic Magazine or address Dept. G.

No. G3136

Price Prepaid $8.75

### Japanese Silk Wadded Robes

MADE by hand from finest quality Habutai silk or Kabe crepe, heavily wadded to insure warmth, and made to conform to American tastes. Each robe is made of silk inside and out with an interlining of cotton that is hand-laid and quilted. The jackets and robes have silk frogs which button down the front. The collar, cuffs and pockets are tailor-stitched, and the robes have a girdle that may be tied around the waist

**No. G3136.** Women's Wadded Habutai Silk Robe, comes in old blue, light blue, pink, navy, maroon, old rose, black, gray and lavender. Sizes 36 to 48.
Price prepaid .................... **$8.75**

**No. G3140.** Men's Japanese Hand-quilted Silk Lounging Robe; comes in navy lined with navy, brown lined with old blue, black lined with red. Sizes 38 to 50.
Price prepaid .................... **$8.50**

**Be sure to state size and color in ordering.**

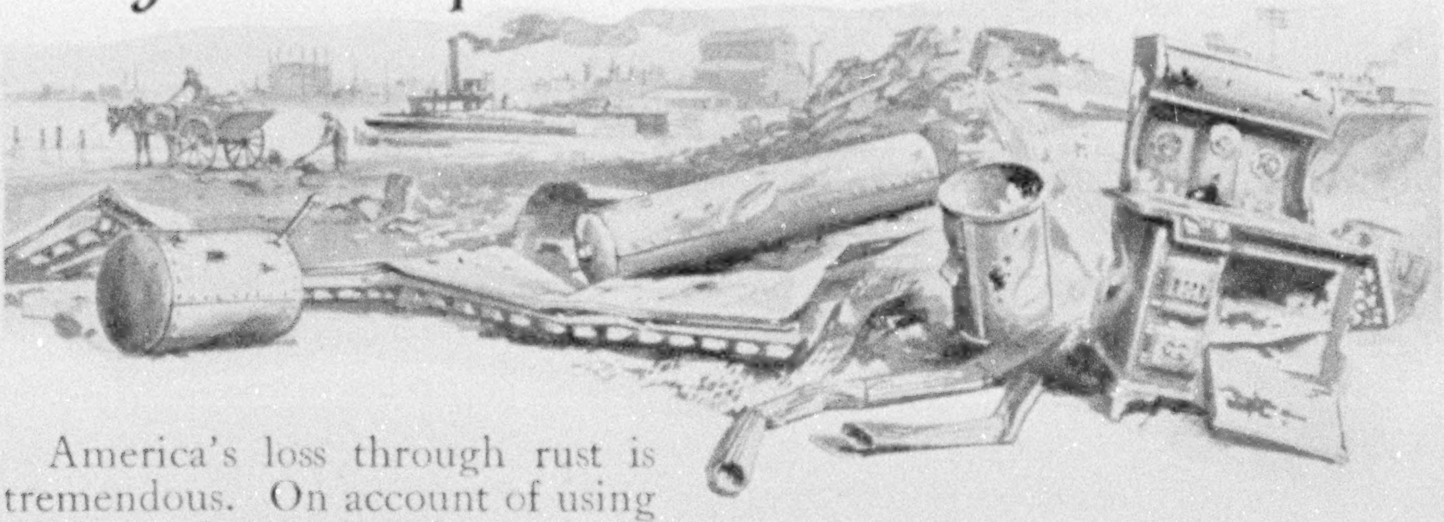
OUR line also includes men's and women's jackets, plain and embroidered, and vests, sleeveless and with sleeves in Habutai silk (wadded) and Kabe crepe (crepe de chine). All wadded goods are reproduced in actual colors in the new Vantine catalog.

No. G3140

Price Prepaid $8.50

·A·A·VANTINE·&·CO·Inc. Fifth Ave. & 39th St., NEW YORK

# RUST-Not Wear-Builds Up The Junk Heaps of America



America's loss through rust is tremendous. On account of using ordinary, fast-rusting sheet metal Americans annually lose enough money to build three great super-dreadnaughts.

Think what this means. In many instances the ordinary sheet metal lasts but three or four years on a roof. Armco, American Ingot, Iron lasts several times as long.

# ARMCO IRON Resists Rust

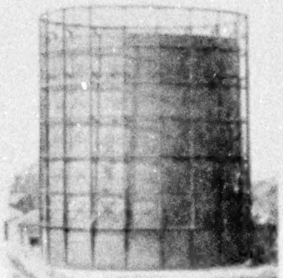
Armco's great rust resistance is due to its purity and to its careful manufacture. It is not only the purest iron made but the most nearly perfect in physical evenness, in the elimination of gases and in respect to all the other qualities that form the basis of rust resistance.

Multiply that one saving by a million roofs. Apply the saving to tanks, cornices, window frames, stoves, wire fencing, galvanized products of all kinds—to every sheet metal article that is prey for rust.

If you have any trouble securing the article you want we can give you the name of a manufacturer who will gladly supply you with this more durable material. For example, the Page Woven Wire Fence Company, Monessen, Pa., will gladly send you a catalog of their Armco fence.

The Story of Armco Iron means so much to every user of sheet metal that we will send, free, to all who ask, a handsome, fully illustrated book—entitled

*"Defeating Rust"*



Whether you are manufacturing, selling or using sheet metal products you should have this book. Send your name for a copy today.

**THE AMERICAN ROLLING MILL COMPANY**

Licensed Manufacturers under Patents granted to
The International Metal Products Company

**Box 723, Middletown, Ohio**

*Branch Offices in*

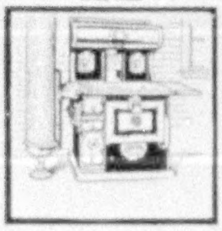
Chicago
Pittsburgh
Detroit New York

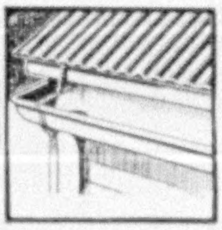
AMERICAN
ARMCO
INGOT IRON

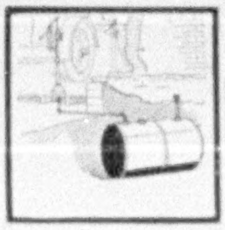
St. Louis
Cleveland
Cincinnati

Armco Iron is specified for cornices, window frames and sashes, ventilator ducts and all other sheet metal work.

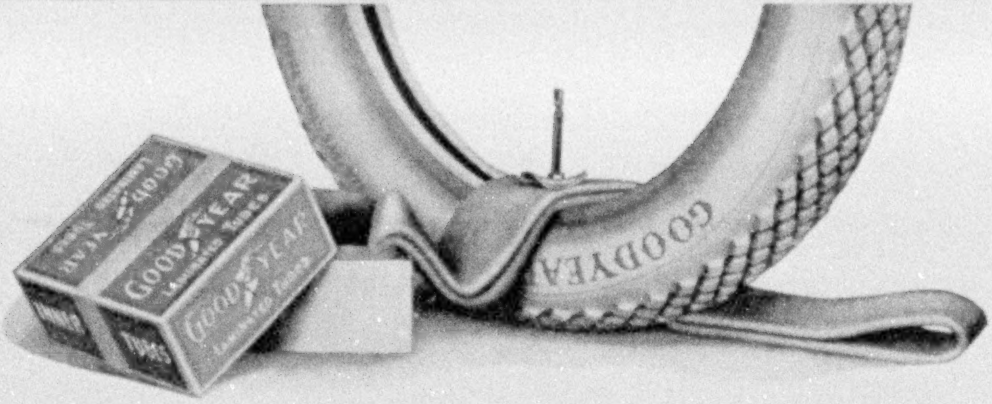
These illustrations show a few products for which Armco is used by leading manufacturers.







The trade mark ARMCO carries the assurance that iron bearing that mark is manufactured by The American Rolling Mill Company, with the skill, intelligence and fidelity associated with its products, and hence can be depended upon to possess in the highest degree the merit claimed for it.



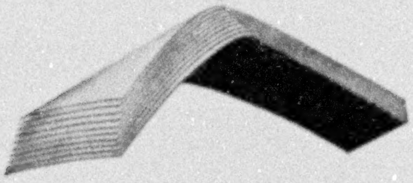
# A Business Story

## About Goodyear Laminated Tubes

**Here are some facts, first told in print last spring, that increased Goodyear Inner Tube sales by 50 per cent in one month. Which shows how many men are looking for surpassing Inner Tubes.**

### Many Tubes in One

Goodyear Laminated Tubes are not built of one thick piece of rubber. They are built of many thin layers vulcanized together. Note the picture.



In those thin layers, flaws and foreign matter are easily seen and eliminated. In a thick piece of rubber they often go undetected, resulting in leaky tubes.

We make our valve patch integral with the Tube, which prohibits leaking there. Thus we insure you a leak-proof Inner Tube.

### 14% Thicker Now

This year Goodyear Laminated Tubes are being made extra heavy. We have added an average of 14 per cent more rubber. Yet we reduced our Tube prices by 20 per cent when we reduced our tires. So Goodyear Laminated Tubes, extra thick, cost about the same as other Tubes today.

### Never Colored

These Tubes are gray—the color of pure rubber. Mineral color would mean adulteration. And mineral in rubber increases friction heat—a Tube's worst enemy.

For these four reasons you should get these Tubes. Any Goodyear dealer will supply you. And their extra service, we are sure, will win you to Goodyear tires.

GOOD YEAR
AKRON, OHIO
**Laminated Tubes**
Extra Heavy Tubes—Uncolored
Built Layer on Layer
By the Makers of Fortified Tires

**THE GOODYEAR TIRE
& RUBBER COMPANY**
AKRON, OHIO

(2606)

# This is What An Owner Tells Us

"Ripolin Enamel Paint was applied to the interior of my home fourteen years ago and is in just as perfect condition now as the day it was first put on.

"In my living rooms I have the pure white Eggshell Finish—soft and beautiful. In my kitchen and pantries the high Gloss Finish, buff color. If people could only see Ripolin in actual service and know it as I know it, they would never accept anything in its place." Then he mentioned the satisfaction of escaping once for all the need of repainting. "We simply use a damp cloth," he said, "and Ripolin freshens up like new—never discolors, cracks, chips, or peels."

This man's evidence is typical of others who use Ripolin because it insures you against the trouble and cost of repainting—simple cleaning is all it needs—and remember that Ripolin can't be harmed by any amount of rubbing and scrubbing.

Made by the old Dutch hand process, a gallon will cover from 500 to 700 square feet, depending upon the surface. Your painter or decorator will tell you the quantity needed.

That brilliant, high gloss finish is unexcelled for the kitchen, pantry, or wherever a glasslike surface is desired. Then again for halls, reception rooms, libraries—wherever the softer effects are preferred—Ripolin is obtainable in a beautiful Eggshell Finish, or even an absolutely flat finish. Any desired tint can be obtained by mixing pure color ground in Japan with white Ripolin—a buff or light green shade is excellent for kitchen walls.

**Unsurpassed for automobiles—choice of 12 beautiful colors; also yachts and motor boats, because it is the only enamel that will stand the test of salt water and sea air.**

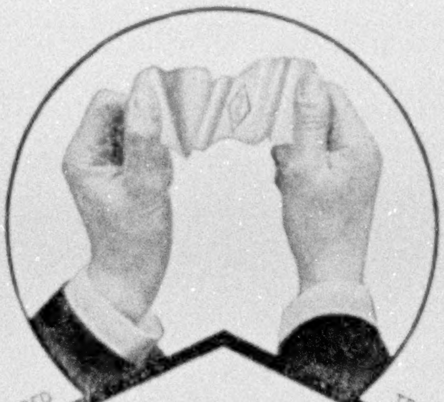
**Send 50 cents today for large trial can, with brush**—enough to give a thorough test—try it out in your own home—then you be the judge. With it we will send the coated strip of tin and the book showing residences, exclusive clubs, and palatial hotels finished with Ripolin; also name of the Ripolin dealer in your territory.

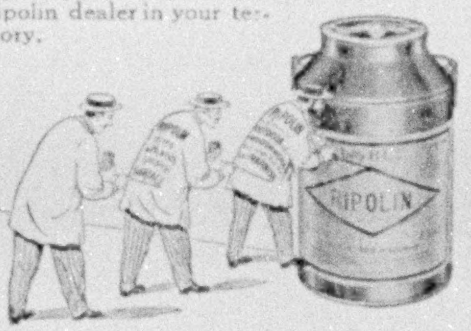
### *Make Your Own Test*

Bend this strip—prove to yourself that Ripolin is so elastic and tenacious that it cannot peel, flake, or blister. This coated strip will show you why Ripolin retains its freshness year after year, without repainting but merely cleaning.

J. A. & W. BIRD & CO.

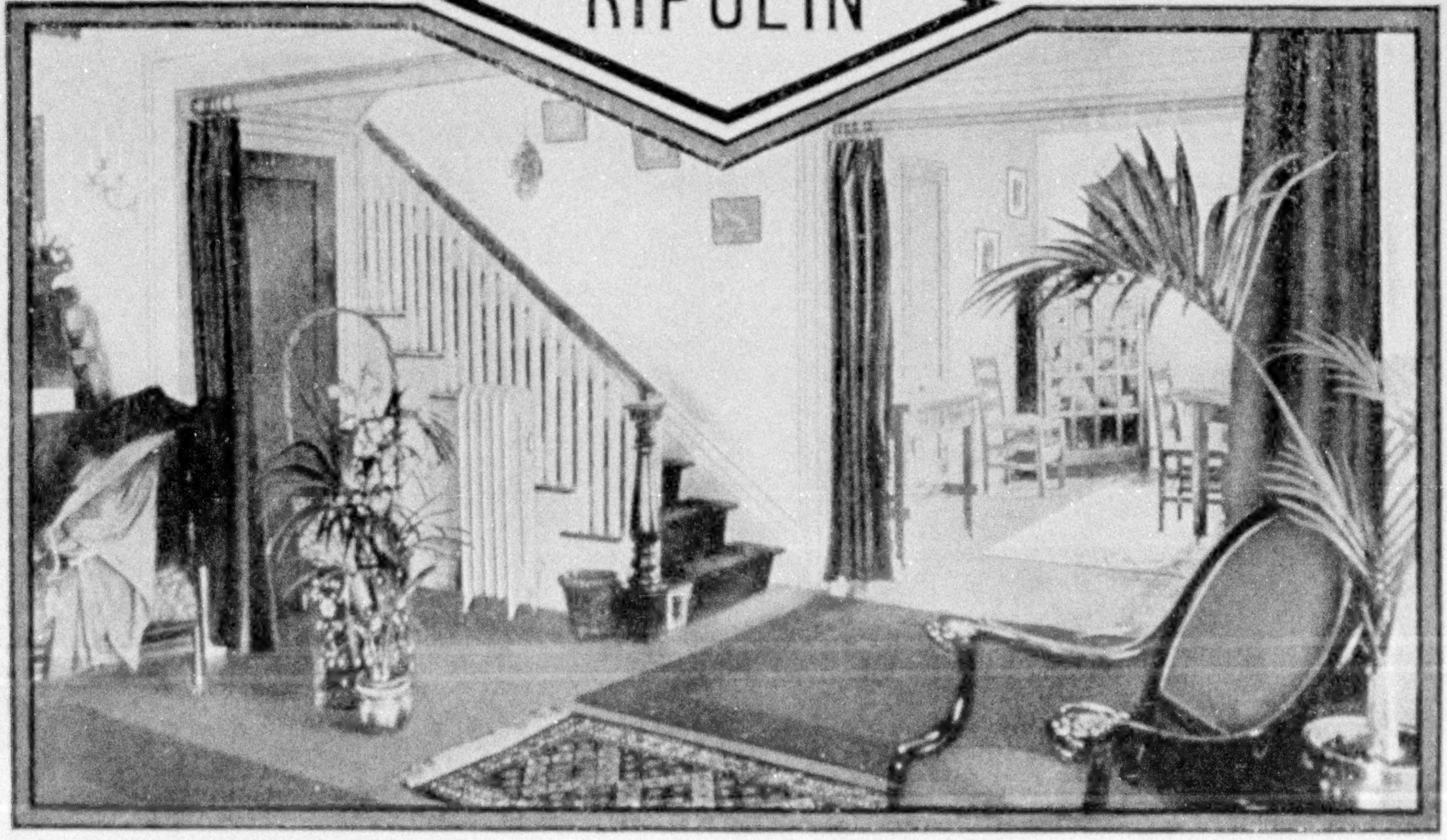
Importers and Distributers of Ripolin
for United States and Canada
90-D Pearl St., Boston
68-D Beaver St., New York
657-D People's Gas Bldg., Chicago



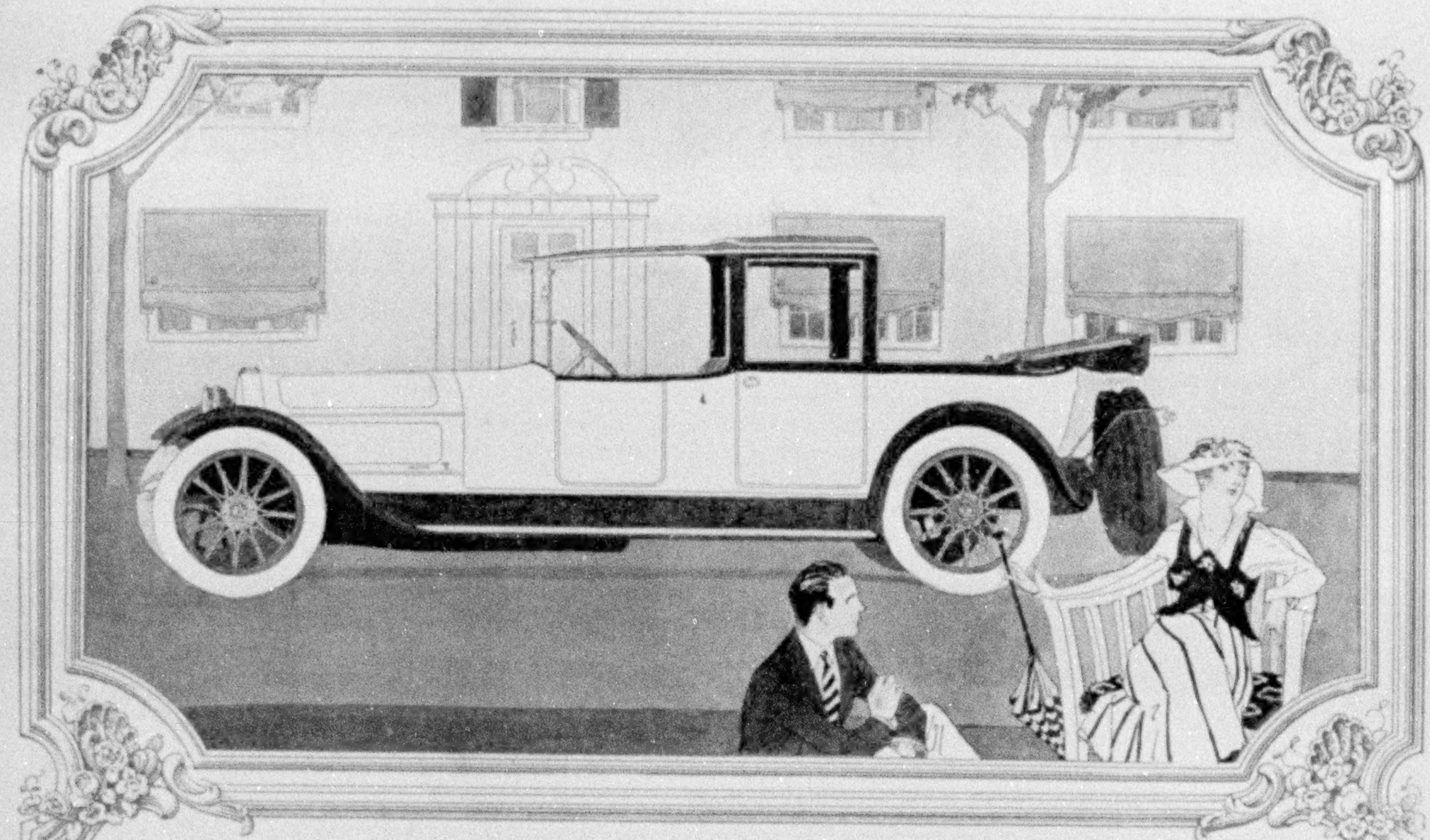


*Note Seal on Can*

REGISTERED RIPOLIN TRADEMARK



Interior view of Wood Residence, Ardsley, N.Y. Finished with RIPOLIN. Arthur T. Remick, Architect.



THE LOCOMOBILE is the car built in limited quantities and with such extreme carefulness. A production of only Four Cars a Day—for that exclusive class accustomed to the best and not content with any compromise.

The Locomobile is extraordinary in its ease of riding. It is smart, in good taste. It is expensive; it is a great satisfaction to the owner who can afford it.

Closed Car Appointments and Upholstery Fabrics selected and harmonized by Miss Elsie de Wolfe.

Individual bodies specially designed and built to order by our Custom Body Department, under the personal supervision of Mr. J. F. de Causse, for ten years manager of Kellner's in Paris.

*The*
LOCOMOBILE COMPANY
*of America*
MAKERS OF FINE MOTOR CARS

PRESS OF JUDD & DETWEILER, INC.

XUM